

SCIENCE FICTION Quarterly

NOV.

132 PAGES

25¢

**WE SHALL
COME BACK!**

by C. H. Liddell

**THE BLACK
ALARM**

by George O. Smith

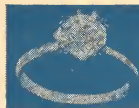
THE BELT

by Wallace West



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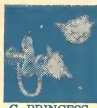
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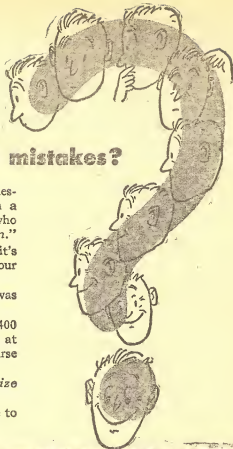
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SCIENCE FICTION Quarterly

November
1951

132 PAGES OF NEW STORIES — NO REPRINTS!

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ROBERT W. LOWNDES, Editor

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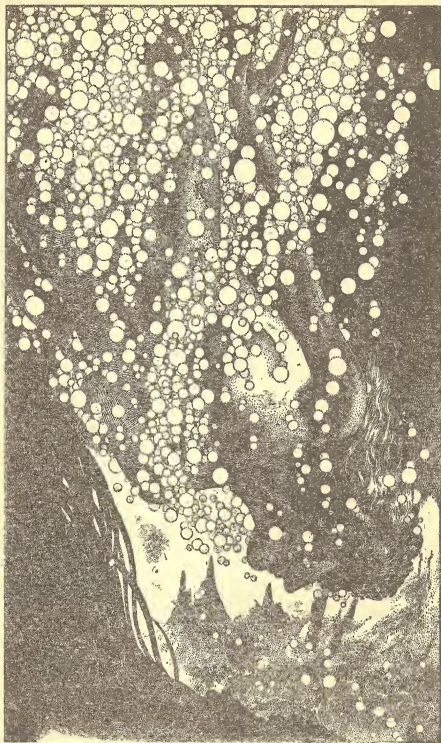
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The clan broke its formation and spun wildly apart, searching in all directions for the danger.

WE SHALL COME BACK

FEATURE NOVEL OF WORLDS TO COME

By C. H. Liddell

Dim were the memories of Man's greatness in this latter day, when humanity had returned to the sea for refuge. But Ran knew there was hope, if he could fulfill his mission—if he could keep his tribe men...



Man: An individual at the highest level of animal development, mainly characterized by his exceptional mentality. The human creature or being as representing the species.

—American College Dictionary

Man is the highest type of animal existing or known to have existed.

—Webster's New International Dictionary

THE FIRST soundless death scream, from far away, when the killing fires struck, exploded in red echoes in every listening mind. The little clan of humans in headlong

flight down the undersea current broke for an instant into a scattering hysteria, until Ran's monitoring thought shot out to halt them.

The flurry quieted. The clan drew together, sleek, pale silver, shuddering above their shadows on the green sand of the sea-bottom. Huddling close, they heard and saw with keener senses than sight or hearing the massacre of that other, kindred tribe. The same death might be their own before evening, and they knew it.

Speaking epigrammatically, there are two remarkable qualities about humans, and sometimes it is difficult to decide which is the more amazing—man's brain, or his reluctance to use it!

They waited, trembling as the water rocked them, while far-off fountains of fire rained down upon the distant clan, killing wherever it touched. Without vision they could see colored stars arrowing to their targets, and the screams of the dying burst scarlet in every hearer's inward ear. Echoing dully, like a knell beneath those cries, sounded the iron heart-beat of the Destroyer. The tribe wavered when they heard it—even Ran wavered—on the edge of a threshold Ran alone had recognized long ago.

Blind, brainless animal panic urged them to scatter and run until they dropped. Instinct urged them. Reason said wait.

Then something moved tremendously through the waters—a vast, calm pulse that beat once, twice, a third time—and ceased. It was one of the "Thoughts of the Deep", impersonal as the Gulf Stream, and as mighty. The little clan was tossed for a moment upon it as if upon a wind that blew under the ocean.

Something deep in Ran's mind took courage from its calm, and drew back from the dark threshold upon which the whole tribe poised, the mindless threshold between instinct and reason, when instinct shouts so loudly and reason's voice is so cold and quiet that only a man could hear it. Not a beast—a man.

The old knowledge of duty roused itself wearily in Ran's mind again and he turned in the water, gathering in the minds of the clan. His duty was not only to his people, but to something beyond them all, beyond himself, in that unguessable future of which he knew only the legend and the promise.

He must keep them men.

They stood on the very threshold of the sea-beast, at the bottom of the long slope down which their whole race had been driven for so many milleniums, back into the waters from which they first sprang, back to the

mindless unreason of the beast. And the drivers, the hunters, the killers, pressed them inexorably toward that last, low door.

Ran rose upright in the water and called the clan together, mind touching mind without words. "It's all right," he told them patiently. "They haven't found us yet. We must run; if we can reach the city we'll be safe. Don't scatter! Follow me, and keep together, and we'll all be safe."

It was, perhaps, a lie, and all but the most foolish knew it, but there are times when lies may be both more comforting than truth and more useful.

Sanctuary was where the sunken city lay, where a man might flash in and out of windows a hundred stories above the pavement, and with luck hide safely even from the bright Destroyers from the Air.

There was another kind of safety there, too, though not even Ran could name it. Somehow, in the sunken cities which their own kind had built so long ago—in another element, the tribe seemed less close to that fatal threshold. Somehow the recurrent, almost irresistible waves of impulse toward mindless action were less strong there than in the open sea.

Ran's people, in this long, dim twilight of the planet, were very near to the point where they would lay humanity aside forever. Ran himself knew, as well as any, the strong urgencies of sheer instinct in the face of danger. But he knew his responsibility, too, and he felt it strongest in the under-sea cities. He had even dreamed, rocking in the darkness of the ocean nights, about such fantastic feats as turning in flight before a Destroyer and facing it resolutely as it sank through the waters toward him. Dreams in which he was not entirely Ran, but perhaps the whole tribe too, perhaps, somehow, a part of the sunken cities and Champion of the race of man.

Nothing on earth had ever faced

a Destroyer—nothing that hoped to live. Yet Ran dreamed, since there was no harm in dreaming, even if sleep were a thing man could control.

Heavily he cast out the net of his thought and gathered in the tribe, interposing his own mental images between theirs and the far-off massacre reddening the waters and the listening minds. He goaded his people into motion and hurled them in an arrowing swarm down the long slope of the undersea forest, away from that distant focus of danger. His mind touched the minds of the whole group simultaneously with firm, swift, reassuring images that had no shape, being only the clan symbols for ordered flight.



THE THOUGHTS of his tribe flickered against Ran's like the touch of cold, unsteady fingers. Terror; exhaustion; the trembling thought of a silver-furred woman who had never run so long or felt such fear before; the quaver of a furry child; the wild, scattered thoughts of the foolish. And behind all these the steady, uncomplaining firmness of the older clansmen, supporting Ran's thoughts without question because they had chosen him for their leader and knew they had chosen well.

"Hurry," he told his tribe. "Don't lag. Hurry! We can reach the city by noon if we hurry. Run, run, run! I know we're tired. When we reach the White Cleft where the mussels grow we can rest for a moment. You can make it that far; we'll rest at the White Cleft. Run!"

The words meant nothing. He was

using them as a shield to blank out the cries of the distant tribe from which no sane thoughts came, now. There were only mindless flashes, screaming with panic—the silvery arcs of sea-folk darting wildly and the fiery arcs of the stars pursuing, against which no defence could stand—and the bursts of color, and the dying. Ran got no flash from their leader, if he lived; surely, he thought, all need not have died if the leader had been wise. Surely a few might have been directed into hiding, or the strongest and the children sent on ahead while the rest drew the Destroyer's fire. But these were beyond all reasoning, beyond all reach of the mind; it was sea-beasts, not men, whose deaths exploded in the thoughts of the listeners.

So Ran's tribe fled, for the best and oldest of reasons, through a clear undersea dawn that was beginning to glow green with the filtering of early sunlight from far above, where the Aliens lived and ruled the world. They knew nothing of the Air and the Aliens, except that from them the implacable iron Destroyers came down. They knew nothing of what lay in the Great Depths out of which the slow, calm "Thoughts" arose. They knew only their own water-world, how to hide in it, how to run for their lives when the Destroyers drove them. How, if they were lucky, to save a few when the Destroyers found them. That other tribe had not been lucky.

No thoughts came through at all, now.

Then in a flurry of churning waters, sending his message screaming ahead of him in mindless panic, a blue-silver body swept down toward them through the swaying jungle, tearing the brown leaves as he passed, blind with fear and shrieking, "*Run! Run! Run!*"

The clan broke its formation and spun wildly apart, searching in all directions for the danger. Ran sent his perceptions fastest and farthest and

keenest, probing backward along the wake of the fugitive for an iron, torpedo-shaped thing slipping silently toward them.

There was nothing; the Destroyers were here, but not close, and none of them seemed yet to suspect the presence of the fleeing clan. This tumult might very easily summon them. Ran ruffled out his fur to test the water, smoothed it sleek again and turned strongly in his course, rising to meet the newcomer.

It was a man, big, with a blue sheen to his fur, and half-insane thoughts running like a rip-tide from him through the receptive listening minds of the tribe, too frightened and exhausted to be under much control. Ran felt them shaking the calm reins he had laid upon them, and fought back his own anger, because that too would only inflame them more. "Silence!" he ordered them all sternly, but the newcomer most. "Silence! Follow us, but don't speak."

The man whirled in the water and saw him. He flashed downward with quick, jerky strokes, carrying with him upon his fur the indefinable taint of blood that no one could mistake. The two hung a few feet apart, measuring each other.

And so Ran met Dagon, leader of the lost tribe, now leader of no tribe.

RAN DID NOT like what he saw in that dark mind that had held unquestioned power for so long. There was strength latent there, and courage of a sort, but there was no discipline at all, and so the courage had crumbled before the Destroyers. *And when courage left mankind, Ran thought wearily, what remained? Only blind ferocity, like the shark's.* For an instant he saw the gleaming bodies of his people as he saw a shoal of fish, mindless, taking the last fatal step down the descending path into the darkness of the race.

Out of Dagon's mind thoughts of-

panic and flight and death spun in a whirlwind that caught even Ran himself, a little, in its dangerous spiral. It would be so easy to give way to terror, so easy to abandon the tribe and fly in senseless, unreasoning panic until the Destroyers found them all.

It was easy to do what Dagon had done. But, of course, when a man sees his whole tribe destroyed in one bursting barrage of stars—

"Join us," he said as calmly as he could. "We'll find a shelter; we know a sunken city not very far away—"

But Dagon was used to rule, not to accept commands. His thoughts burst out in a strong shriek, wild with terror, urging disorganized flight—each for himself. A few of the younger and less stable of Ran's tribe flashed sidewise in the water, beating their arms in panic, churning froth and brown weed-leaves, ready to fly the instant they saw a shelter to hide in.

Ran lowered his head, gathered his exhausted muscles strongly, and with all his power drove a measured blow of his bulky shoulder into Dagon's neck between shoulder and head. He had fought often enough before; he knew where to strike.

Dagon's frantic thoughts broke off into blankness for a moment—a brief but all important moment. Into that blankness Ran sent his own mind, radiating the familiar clan-patterns of unity and control.

The scattered tribe rallied a little, wavered, hesitated and then drew together, waiting. Dagon's thoughts took form again after that instant's stunned silence. But he was hesitant, unsure. Reason was not in him, and Ran had won—for the moment.

"Come," Ran said, and doubled his legs in a strong beat that carried him to the head of the hovering clan. "Quiet! Follow me and keep your ranks. You know the way to the cleft."

Suddenly Dagon swung around and swam after the obedient tribe. His

thoughts were tinged with red, but he came.

Something moved through the waters. Not the iron pulse that told of the Destroyers. A vast, calm pulse that beat through all ocean curved out in a slow and powerful tide — and ceased. They had heard again the "Thought of the Deep."



DESTROYERS were behind them now, rolling through the shallow seas a terrifyingly short distance away. Ran could feel their tremendous dark bulk, trembling with latent power, gleaming when sunlight filtered down through the ripples to strike submarine fire from their sides.

The clan did not know it. The clan, like all clans, was too ready to let their leader do the watching for trouble, too ready to believe what their lax minds were eager to believe—that safety was closer than danger, food closer than death, a rest upon sandy clearings closest of all. He would not tell them how near the Destroyers were.

Once, as they fled across an open savannah among the sea-forests, a shadow from high above floated monstrously over the pale green sand, and the clan broke ranks without waiting for the command, a flurry of silver bodies flashing this way and that into the shelter of the weed.

Everything in the submarine world fled for cover when those shadows passed. They were not Destroyers—in a sense. They came from the Aliens, as Destroyers came, but these killed all things, including man. Even the shark and the barracuda hid, and the dark seal-people who spoke a half-human tongue so softly. Not only mankind had altered in body and mind in the long milleniums since men first took shelter in the ocean, but the warm-blooded altered most. The seal-clans and the dolphin tribes filled the underwater with soft murmurs of their primitive talk. They had nothing to fear from the Destroyers; the mission of the Destroyers was the extermination of man alone.

But that shadow was something unknowable which the Aliens themselves

In its dawn, and in its twilight, a race may be able to sense such pulses. Something like this may once have moved through misty fern-forests, when the beat of creation itself had not yet faded into silence. Furred primates, not yet men, may have listened and sniffed the wind when those unheard pulses moved through the milky air, above the booming of the mastodon's feet and the cry of the carnivores. Man cannot very clearly sense the heart-beat of the world; but those who came before man may have known—and those who came after man know, too. Man wearing fur once more and drawing nearer and nearer to the close of his long circle of planetary life, here in the seas that bore him, heard the beat.

It was part of the sea, as Ran was. It had always been there; man did not question the unfathomable. Memory of it was mixed with Ran's earliest memories, the dark, cool, quiet remembrance of his first years alive and the "Thought of the Deep", mighty, unknowable, moving through all ocean on such a subtle plane that not a frond of seaweed stirred, though there was power in that mighty pulse to turn a tribe aside if it swam cross-current of the slowly furling "Thought." Ran did not question, any more than he questioned the tides themselves.

He knew it rose out of the Great Deeps. What lay there no man knew. No man had ever gone down into the Deeps and returned.

rode. Ship, perhaps. No one dared look up to see if a keel printed the dimpling surface or rode high up in Air. That sort of ship carried hunters who preyed on all lives alike. Even the majestic whale, about which nothing was known except his majesty, had all but vanished from the seas after those ships began to pass. All things hid when that shadow slid across the ocean floor, mankind shouldering fish and seal and dolphin alike for shelter among the rocks.

But it passed, and all of the ocean world but man was at peace again. Man fled on.

What were the Aliens? No one knew; no man had any mental picture at all of the inheritors of Earth. They only knew that whenever men met the Destroyers, wherever they met them, there they died. And shark and barracuda fed upon what the inheritors left of those whom Earth bore and those who had ruled her, once.

And might, again.

That was the legend, anyhow; that was what kept men like Ran still fighting, till flying before the Destroyers, still stubbornly welding their clans together and seeking out deeper and farther sanctuaries where their silver-furred children might grow to maturity and pass on to yet another precarious generation the heritage of man.

The Earth-Born shall inherit Earth.

That was the legend; that was the promise. It was all men like Ran had to hold to, and it was little enough. Ran could not even feel sure now that there were any other men left alive except his own fleeing tribe.

Once, it seemed to him, the Destroyers had killed much more casually, almost at random. That was in the old days he could barely remember, when the tribes of men had thronged the shallow, sunlit seas around every coastline. The oldest knew tales their grandfathers had told of a golden age, when men even dared to draw their

silver-furred limbs up the beaches—the loneliest beaches, of course—and bask in the direct warmth of the sun. Legend said they had even used their voices in these days; they had spoken and sung in air. The old ones remembered great sweeping choruses stronger than the beat of surf, rolling from beach to beach as the throngs of men sunned their silver pelts and joined their voices.

But the Destroyers put an end to it long ago. The great killings of the last few years had been systematic. The machines came down in their thousands, more silently than the shark, and far more deadly, and reaped the clans of ocean as men had once reaped grain in the old, forgotten days when the Earth-Born ruled the Earth.

Now the farthest extension of the senses found no quiver of human thought in the waters anywhere. Were these the last? Perhaps; perhaps not. Ran only knew they had come a long, long way down the warm roadway of the Gulf Stream which was mankind's favorite path undersea, and encountered only that one other clan whose deaths still made the memory shiver. Perhaps they were the last.



RAN SWUNG them sharply in a racing spiral around a point of rock, the clan streaming out obediently in a silver ribbon and fleeing on down the long incline through upward-wavering weed. Ran could not stretch out his specialized senses in any direction very far without striking upon the numbing iron presences that prowled the sea-floors, testing the water for their prey.

Patiently he drove his clan along the tribe-ways toward sanctuary. Patiently he sent his promises of safety

out. The "Thoughts of the Deep" moved now and then in vast tides through the shadowed water...

"We are men. I'll keep us men. As long as we stay alive."

HE CAME last out of the shaft down which he had shepherded his people. They hung, panting and uncertain, in a cloud around the cleft-mouth, waiting for him. Dagon floated a little way apart, raking the city before him with keen, quick glances. He knew a good refuge when he saw it.

Here were rank upon rank of high stone towers aquiver with veils of weed. The canyons between the buildings were too narrow for a Destroyer to pass. And there was something in the construction of the towers which confused them a little when their quarry hid among the buildings. Ran connected it vaguely with the silvery gleam of metal that still showed bright when the moss was rubbed from it.

Heretofore the city had been safe; heretofore when the Destroyers crossed a clan's path and unloosed their glittering destruction upon their quarry, any who, by agility and speed could reach a hiding place in this city, or another like it, had survived.

The tribes knew they were cities, knew dimly, with an unthinking racial memory, that they were cities built by men. How, or when, nobody had ever wondered. It did not occur even to Ran that the cities might have been reared on dry land, or that the land had sunk. It was enough that there were cities here at all, to offer the sea clans refuge when they needed it.

Dagon's quick glances glittered with appreciation of the place Ran had guided them to. There was a broken dome a little way off which caught the eye first because of its size, and Dagon's whole silvery bulk twitched impulsively at sight of it. The dome was not a very good refuge, there was no metal remaining in it, and it was too conspicuous. Ran had another shelter in mind, but Dagon gave him no time to direct the clan there.

"Run!" Dagon flashed at the whole tribe, not controlling his thought but

There was going to be trouble with Dagon. Ran thought of it as he sank slowly through the long cloven shaft after the last of his people. At the foot of the shaft lay the sunken city. The walls of rock through which they reached it were colored dull red and iridescent blue-green from explosions that happened aeons ago. The floor of the cleft was fused green glass.

Ran slipped gently downward, watching the last tired clansmen struggle through weeds toward safety, catching Dagon's confused thoughts above the soft, twittering murmurs of the tribe. In the depths of Dagon's mind, under the confusion, lay something cold and ominous as a barracuda. Fear, mostly, and the potentialities for rage that was not quite human. There can be mutations on the downward path as well as the upward, and in Dagon's mind lay the clear seed of mankind's future.

"Are we fish?" Ran asked himself. "Are we nothing but fear and hunger?"

Dagon had fled as mindlessly as a fish when the Destroyer wiped out his tribe. He should not be swimming this strongly now; he should not be able to. The leader of a clan had no right to this much remaining energy, with his clan so lately wiped out after long flight. A tribe leader should not survive his clan at all.

Ran realized suddenly that he was a little afraid of Dagon—not physically afraid, but afraid in the mind, where reason dwells. Dagon's weakness was a failing the whole tribe was heir to, Ran with the rest. And Dagon's failure could be a foreshadowing of Ran's failure, when the hour of trial came. Would Ran's tribe scatter mindlessly, to be hunted down in the open, like Dagon's? Would Ran—

"No," he told himself resolutely.

sending it out broadcast and scarcely knowing he had uttered the command at all. It was sheer instinct made audible. "Run for the dome! We can hide there while we rest. Everyone—follow me!"

The clan's common impulse toward flight, already keyed to a high, hysterical pitch, made them respond instantly and as unthinkingly as Dagon himself. Every sleek, shining body flashed simultaneously around and lined up for flight toward the polarizing goal of the dome.

Then reason—what reason remained to man—interrupted the impulse, and a few of the tribe paused shivering uncertainly, remembering that Ran's was the voice which commanded them, not Dagon's. Yet Dagon spoke so authoritatively, urged them toward the obvious shelter, speaking for the obvious need—Most of them darted forward, at Dagon's heels.

Ran galvanized his weary muscles and shot forward through the tribe, scattering it in all directions, breaking up the pattern of their flight before it had fully formed. Then he was at their front, wheeling in the water so abruptly that his fur streamed sidewise for a moment as he turned to face them. With all his authority he shouted, "No! No! Not the dome! You know our refuge! I'm your leader, not Dagon. The dome is too open to be safe; head for our tower!"

Blind panic made the foremost deaf to him. It was the foremost who had first responded to Dagon, and the too-quick response showed their hysteria. There was only one kind of order they would hear or respect now.

Ran hurled himself against the nearest, knocking him sidewise, cuffing a second across the face, shouldering a third hand. His thought was a roar in their minds, harsh with authority. "Head for the tower! Listen! Head for the tower!"

The disorganized flight paused, wavered, piled up into a milling cloud around the arrested forward plunge of

the foremost. In a moment or two, Ran and Dagon were hanging in the center of a half-hysterical globe of clansmen, a globe that shifted and wavered furiously around the outer edges, while every eye watched what went on in the heart of the crowd, where Ran had brought himself up just short of Dagon.

Dagon swung himself heavily around in the water, letting his pelt loosen a little to increase his bulk. Anger suffused his face wherever human flesh showed through the fur, and his lip lifted over serviceable fangs.

IT WAS no time for fighting; Dagon should have known that. The least taint of blood in the water would certainly draw the killer sharks, and almost as certainly the Destroyers themselves. But it was no time for argument, either.

Ran drew his upper lip tight and let his own sharp canines flash. He did not speak directly to Dagon. "You know our refuge," he told his tribe, casting out the thought in his old, encircling way to enfold the whole group. "Follow me."

His thought was a command that moved before him, opening up a path through the hovering globe of clansmen. There was an instant when Dagon's snarl was a challenge to combat that could not be ignored.

But the combat never came.

A tremendous shadow moved across the sea-floor. When its edge touched the intent cloud of sea-people as they hung watching, thoughts interlocked with patternless violence, every silvery body started simultaneously, shivered, and looked up.

Far overhead, distorted by ripples between and hanging just under the surface of the sea, a questing Destroyer sailed slowly, trailing its egg-shaped shadow across the sand.

Squarely above the edge of the cliff where the clan hovered it paused. No one stirred or spoke; no one even thought.

Then slowly, slowly the Destroyer began to sink. It was not sure of them, down there. The metal in the sunken city confused it. But built into its complex body were senses which told it that something flickering below might be its prey...

Ran sent out a tiny, tentative whisper of thought, touching each mind simultaneously. "Steady," he said. "It may pass over. Wait for the signal. When I give the word—scatter." He said "scatter" very, very gently, knowing that even the sound of it in panicky ears might start a rout among his followers.

The clan quivered once in a mind-linked, instantaneous response from every individual agreeing as one. Even Dagon joined. And the Destroyer sank and sank, its shadow growing enormous on the sandy street, among the waver of weeds and the knotting and unknotting of ripple-patterns which sunlight cast from the distant surface.

Thoughts wavered and knotted with the same motion in Ran's mind as he waited tensely, gauging the angles of possible flight, postponing to the last instant the explosion of speed that would scatter most of the tribe and would almost certainly sacrifice a few to the Destroyer while the rest found hiding places.

His thoughts were cold and bitter, like the water. In a part of his mind he was counting over to himself the slowest and the weakest who must be abandoned first if he hoped to save the others. The choice was hard, but he had to make it.

Another part of his thought was tuned to the finest and keenest pitch of listening for some hint of other clans, near or far in the cold, green, glassy world around him. He found nothing. No whisper of human thoughts or human life anywhere in all the vast silences of ocean. Only the faint clang, far off, of his own thought striking harshly against some ranging Destroyer. Far and near—terribly, fatally near—he could sense the encircling

enemy. But by every evidence of human senses, this clan alone remained alive of all the clans of ocean.

This is still sanctuary, he reassured himself, watching the gigantic shadow grow upon the street, rippling across the angles of buildings, spreading like a vast thundercloud above them. *We can hide here, and they've never yet caught us when we could hide. But if this last refuge should fail—what then? What then?*

Majestically through the water, from deep, deep down in the abysses which no man knew, a long "Thought" of the sea moved like a slow heartbeat, once, twice, three times, and was gone.

The vast dark bulk of the Destroyer hung like Leviathan above them now. Ran drew in his breath to utter the command for flight, but he held it, waiting, watching. The water between the terror-frozen humans and the hovering machine wavered until the machine itself seemed insubstantial, a shadow the waves could dispel. But it was no shadow; and there was no defense but flight.



BY THEIR very existence the Aliens who made those machines and sent them into the depths of ocean to hunt down mankind, broke one of Earth's oldest laws—the law of balance. On Earth every creature has its opponent. But nothing under the sea or above it had ever stood against the iron Destroyers. It seemed to offer proof, if proof were needed, that the Aliens came from outside Earth, usurping man's heritage.

It seemed a faint hope now that the Earth-Born might still inherit. The clear light of intellect had already dimmed too much, guttering down in such instinctive urges as drove Dagon.

But stubbornly still Ran clung to the ancient legend. *The Earth-Born shall inherit the Earth.* He had to cling to it. If he gave it up before he could pass it on to the next in line after him, what was the use of struggling at all?

The Destroyer was close over the tower-tops now. It paused there, probing the weed-clogged streets for the throb of warm-blood hearts down here among the cold-blood hearts. Warm and cold alike cowered in the shelter of the weeds and the ruined buildings, instinct and reason together counselling the silence of death itself.

"When it passes that dome," Ran told himself, "we must scatter. But not until it passes. There's still a chance—it may not find us—"

The tension was growing unbearable, but there was still a chance—

Among the brown weeds a silvery human shape convulsed into an explosion of sudden terror. The weakest mind here snapped at the breaking point between instinct and reason.

"*Run! Run! Scatter and run!*" Dagon shrieked in one wild red burst of blind frenzy.

It was too much for the tribe. The Destroyer might have passed over but for this; now it knew. Ran's people exploded from their hiding-places like the fragments of some exploding bomb in the streets of the long dead city. The water rang with the shrilling of their incoherent terror.

The Destroyer heaved itself up a little in the water, sending down strong ripples as it moved.

There was one totally unreasoning moment when Ran hung in the water motionless, fighting back his rage at Dagon and remembering his dreams in which he turned to face the Destroyers. Dagon, the animal, had called it down upon them. Ran, the man, lingered perilously, in brief, impotent defiance of the enemy. Why? He did not know; perhaps there was in his mind some foolish longing to prove to the machines that not all men were

beasts yet, or creatures who worked by instinct only. But he could prove nothing. The Destroyers did not operate by thought, either; they were like machines, obeying an impulse to exterminate, one built into their fire-fountain bodies. Only man thought—and not all men.

Then the suicidal moment passed and Ran remembered his tribe. "The tower!" he roared above the wild shrieks of despair, whirling in the water as he called. "Hide! Run! But meet me at the tower when you can. Run! Run!"

He did not know if they heard. He was already diving deep into the shadows, a strong, compact silver streak flashing deeper into the thick stems of the seaweed, burrowing among their smooth, hollow trunks and the shelter of the rocks. He sought out metal instinctively, hugging the exposed antique ribs of a ruined building and sliding along its cold rail with half-intuitive, half-reasoned confidence that this would most confuse the enemy if it followed.

Behind him, with other senses than sight, he was aware that the fountains had begun to burst among his people—as they had burst among Dagon's, such a short while ago, and for a reason so like this—Dagon's hysteria, Dagon's animal witlessness in the face of danger. A good leader would have sent a few out, and then a few more; and the Destroyer would have followed them, far off, beyond the buildings, before the bulk of the tribe scattered for safety. But then a good leader would have remembered Dagon's weakness, too; the fault was Ran's.

COLORLED stars soared and rained down over the city, flowering in blue and amber, crimson and gold. He heard the death-cries of his clan, counted the names to himself as he lost them one by one, and then by twos and threes and groups. He heard, and closed his hearing, shutting his mind to their last importunate appeals

because he could not answer the cries from that last threshold of human experience.

It was the living to whom he must dedicate his strength, to keep them alive while he could. For the dying he could do nothing; Ran closed his ears and hugged the metal rail, swimming hard.

With a very small part of his mind he realized that Dagon still survived. Many were dying all around them, but Dagon, with the strength no leader should retain whose clan has so lately died under his control, still radi-



cated strong, mindless cries of panic and swam for shelter like the rest.

There was no way to measure how long the fountains of colored stars arched and burst into bright splashes among the weed-shadowed streets. During all that while the sea-people screamed silently and died wherever a star-pointed light flowered.

At last the fountain began to fade; one by one the slow and the unlucky were picked out and pinned by the crimson and silver and cold blue stars.

But Dagon survived; and Ran, hugging the shining rail, survived. The luckier, the wiser, the more agile among the clan survived, too. They were safe now among the inner streets where the Destroyers had never yet been able to follow, and in the hidden places underground where the metal rails ran thickest.

They thought they were safe.

They were beginning to murmur to one another with soft, uncertain touchings of the wind, beginning to converge tentatively toward their place of meeting....

It was then, with the first long, terrible, rending shriek of metal upon stone, that the last chapter of man's history undersea began.

The tribe paused stark still, hanging stunned upon the water, questioning their own minds vainly for a clue to this terrifying sound they had never heard before.

Another deafening scream of metal and stone grinding together was all the answer that came. But it was answer enough. Ran, rising to an opening among the brown stems, saw the beginning of the end take place before him. It was so close the dim underwater vision of the unaided eyes could see it clearly, and so loud that the underwater hearing was stunned by it. The undersea is a noisy place at best, and sound carries a long way; this sound stunned the mind as well as the senses.

For man's last refuge was going down; the Destroyer was moving deliberately now against the city itself.

As Ran watched it set its blunt prow against a tower's base and the fearful shriek of steel and metal sounded again, a long, rending noise magnified by the water, as the tower shivered and leaned outward farther and farther, all its weed-banners streaming away from it. A cloud of fish darted from the shaking windows.

When the tower disintegrated, it gave way all at once, the crown still intact, though the base dissolved and the whole of it crashed down in slow fragments over the humped shoulders of the Destroyer, burying it, hiding it.

For one irrational moment Ran hoped—but it was impossible, and he knew it. Nothing could destroy the Destroyers. When the clouded water cleared he saw the dark bulk rise, shaking off the mantle of stone which the tower had laid upon its shoulders without so much as denting the impervious armor.

Before it was quite clear of the debris, another, remoter scream of

protesting masonry struck their ears in the receptive medium of the water. A rumble as of earthquake rolled down the canyon streets and some unseen tower crashed terribly to ruins upon the shoulders of some unseen Destroyer.

The machine before them swung ponderously around and laid its blunt nose against the next building. The high walls groaned, cracked across, began to lean outward with slow and frightening dignity.

So the last city which had given shelter to man upon man's own planet gave way to the enemy, surrendering up street by street the harvest of man's last clan.



IT WAS A small, stunned gathering that clustered around Ran in the shelter of the rock-cleft through which they had come to this futile refuge. No one spoke as they hung there in the water between the iridescent walls, above the fused green glass of the floor. Exhaustion and despair silenced all thoughts in their minds. They could only cluster around Ran and wait numbly for death.

Methodically, far away, the Destroyers were working over the city, ruin by ruin, searching out the last of the race of man. The city, three times destroyed, went down finally, tower by tower. No one could even imagine, now, what name it had once borne. Ilium, Constantinople, Chicago, London, Perle—who remembered now? Once it had known destruction by fire, as the discolored walls still showed. (The shadows of those who fled that destruction in vain were still printed darkly upon the stones here and there by the strongest fire of all, but there was nothing left in the sea who knew what those shadows were, or who had cast them.) Once the city knew destruction by water. And now...

Calmly, untroubled by any shadow of these conflicts of the upper world, the "Thoughts of the Deep" moved

now and then through the water. The machines paid no heed to them. Perhaps the machines had no senses to catch those deep surges of power. Slow and inexorable as the tides themselves, the vast "Thoughts" unfurled and moved past the falling towers, the huddling people, and then obliviously furled themselves again and vanished.

The last men of Earth were too stunned to pay them any heed at all.

Even Ran, who knew what they would have to do next—what final, desperate danger he must lead them into—scarcely recognized the majestic tide of the "Thought" that passed them.

The clan was nearly a clan of sea-beasts now. Ran hung exhausted and mindless as the rest, sending out no messages. Dagon cowered under an overhang of rock, too awed and terrified even to radiate his fear. This was the last defeat. Intelligence had failed them; cunning had failed them. The mindless things of ocean, surviving through the inflexible dictates of instinct, were safer than mankind, and toward their level man was sinking fast.

To think was so difficult, so terribly difficult. It was easier to stop thinking, to swim in shoals, to follow whatever leader screamed loudest the urgencies they all felt. Running was easier. The old, old mechanisms of the body could save them the trouble of reasoning. There need be no tomorrow for the reason to forecast, only an endless today—if they survived at all. If the Destroyers did not find them and burst through the solid rock to exterminate them.

Something deep in Ran's mind quivered and came reluctantly to life again. The old knowledge of responsibility still drove him, not only duty to the tribe, but to something beyond the tribe in that intangible future of which he knew only the legend and the promise. To save their lives was not enough. He must save their future, too. And most urgent of all, *he*

must keep them men. Dagon's way was easy—back to the mindlessness of the beast...

RAN PUT out delicate, tentative touches of the mind, testing his huddled people. The whole clan shivered at that scarcely perceptible call to life, a summons to take up the burden again which they had so nearly laid down forever.

Some of them shrank away from the touch, rejecting it, closing their minds determinedly; thinking was too painful. Awareness of self was too painful. There were among the clan those who in that moment ceased to acknowledge ego at all. They renounced it for the easier way, and in the choice became sea-beasts.

But there were others who turned trustfully to Ran, opening their minds for orders.

He had no orders to give—only one, and that too dangerous unless it were the last thing mankind could do. He stretched his thoughts a little toward the elders of the clan, asking for suggestions, hoping fervently that the burden of choice need not be wholly his alone. One by one he questioned them urgently.

Out of the sea a slow, unfurling surge of "Thought" moved by them like the beat of powerful music. Ran shivered when he felt it pass, knowing the choice he must make. For the elders could give him nothing.

"We do not know," their minds said passively. "You are our leader. Guide us. Save us if you can."

From Dagon nothing came at all. The sea-weeds that trembled around them in the water were no more silent than he.

Ran listened for a moment to that slow beat of the Thought, his mind drawing after its tidal motion. Reluctantly he spoke. "There is," he told them, "one last refuge. It may mean death, but anything else means certain death. Not even the upper seas are safe for us now. Only one way remains." He hesitated, and said, "There are the Deeps."

Dagon's explosion of fear led all the rest. "The Deeps! Not the Deeps! We must run, but not into the Deeps!"

A chorus of terrified negations burst all around Ran. "No, not the Deeps! No man knows what lies down there. The 'thoughts' rise out of the Deep. What thinks the 'Thoughts?' No man knows.

"No man dares know. Not the Deeps!"

Feebly from Dagon came a tentative suggestion. He seemed to think it to himself, but he radiated it involuntarily to them all. Dagon was losing the ability to think his own private thoughts, which is another mark of the sea-beast.

"We can run," he said. "We can run very fast. Perhaps faster than the Destroyers. Perhaps we can find some other city to hide in. We must run—"

Rising in the water a little, Ran shook out his fur and tightened his weary muscles for action. "We're too tired to run," he said. "The Destroyers are faster than we. They can level every city as they leveled this one. While they are still busy here, we may have a little time to escape. I am going down into the Deep. What lies there, no man knows. It may be death, but it is certain death here. Now, you may choose. I am going—now; you may follow if you will."

They followed, reluctantly, uncertainly, full of terror of the unknown—but they followed. Dagon came last.



HERE WAS the edge of the world.

Behind them lay the open seas they were leaving forever. Clear green water netted with filtered sunlight, floored with sand tinted green by the color of the sea. Behind them rose jungles of swaying weed whose

deep roots clutched the rocks and whose crowns floated upon the surface of the water. These were familiar places. As the seafolk looked longingly back, even the Destroyers seemed familiar by contrast with the unknown.

Before them was the edge of the world. The Great Deep fell away here into infinities too vast for human probing. A sheer cliffside vanishing into darkness, and beyond it only the bottomless sea that turned purple and then deep blue and then an unfathomable midnight far down.

Out of it, the great beats of "Thought" came slowly.

Ran shut his mind to the concept of what might lie below. He swam out over the verge of the cliff and hung there for a moment, casting his senses resolutely downward, testing the depths. Nothing. Nothing. Nothing at all. Only silence, and the leisurely upward rolling of a vast, incomprehensible "Thought" now and then. It might be the planet itself "thinking".

"Follow me," Ran said, and shutting his fur together, let himself sink....

The cliff was two miles high.

They went down slowly, cautiously, a long, wavering ribbon of silver shapes moving against the face of the cliff deeper and deeper into darkness. Light failed them early in the descent, but since vision was not a sense upon which they depended much, they missed it only subtly. Light meant warmth, familiarity, safety. Light meant the heritage of man, though of course they had no idea of that. They only knew the dark frightened them, even when they could explore it with their undersea senses and knew no tangible danger lurked in hiding.

The feel and the taste of the water changed intangibly as they went down and down. Now they were in foreign territory, and anything might happen. Nothing did, except that those vast "Thoughts" wavering upward strengthened until the descending humans were tossed this way and that, as if upon powerful currents, whenever they

strayed into the course of an upward-flowing stream. They seemed to be filtering down between and among the "Thoughts", sinking toward the root of all thinking.

By the time they realized this was a trap into which they sank, it was too late to turn back. At first Ran knew only that at some little distance away another rock wall facing the cliff rose paralleling their course. The walls drew together slowly. Ran decreased the rate of his sinking, stretching out senses in the dark to explore the closing rock walls, wondering if he should turn back.

Caution warned him to, and yet—and yet—No, there was something here in the Deeps that shaped his course. He thought, *Go on, go a little farther, there's something here....*

The buttresses of the world were narrowing to a crevasse, a funnel down which the last tribe of man sank gently, following Ran with unthinking trust.

JUST WHEN the first Destroyer found their track none knew; not even Ran had been aware of stalkers behind them. In that duty he had failed. Or was even failure, now, only one strand of the enormous pattern in which they were enmeshed?

At any rate, someone glancing back the way they had come presently sent out a soundless cry of terror, and every mind leaped to see the cause. Above them, silhouetted against the remote light of day, which mankind was now forever leaving, an oval shape of darkness descended slowly, trailing long tendrils of perception that tested the water for the fleeing tribe.

Panic welded them all into an instant, furry huddle that englobed Ran. He spread his thoughts out like encircling arms to give what reassurance he could.

"They were sure to find us, sooner or later," he said. "But down here,

see how slow they are? Perhaps they're too big to sink as far as we can. See? They're frightened, too. They don't know the Deep. Look—that 'Thought' made them waver. Swim now—follow me. I think we can escape them yet. I think—*think*—there is sanctuary somewhere below us. Swim!"

Now the passive sinking was ended. They heeled over and churned the water with urgent feet, burrowing heads down toward the heart of the planet. Above them a second Destroyer, and then another and another, loomed into shadowy substance from the upper waters.

Mankind sank, and the machines of the Alien sank after them. The rock walls closed until Ran's expanded senses touched them everywhere, honeycombed rock overgrown with deep-sea creatures that were half-animal and half-plant, veils of dim sentience wavering in the caves and along the cliff-sides. From just such dim flickers mankind may have risen in his long climb toward mastery of the air and the planet. Now, deeper and deeper, past the forgotten steps that made his species' past, Ran led mankind backward and downward toward the circle's close.

The vast "Thought," majestically rising, shook them all, ignored them all.

The heirs of Earth, diving down toward the fountainhead of their world, plunged headlong into the trap of their own choosing, and things that were not of Earth, things that ruled it, pursued them to their death. Mankind's last champion could only lead his people into oblivion. For how could the Earth-Born now cherish any illusions at all about the heritage of Earth?

Panic shook Ran as he felt rock walls close slowly in and knew there was no escape. And yet, beneath the panic, something held him steady; something hinted to him through senses too remote to name that defeat was not yet certain, that a purpose lay

behind their coming—that somehow man's ending was not quite yet.

The heritage remained. He must hold the tribe together, and hold them human, until the heritage could be passed on. The children, or the children's children, might still rise and inherit Earth....

Now the rock walls narrowed almost to an end, and below them something vast moved majestically in the water.

The "Thoughts of the Deep" were rising stronger and stronger up this narrowing funnel of rock as they struggled down. In the seas above, they passed like a summer breeze, but here they rose straight up the shaft in powerful currents that tossed the swimmers like chaff when their minds strayed into the heart of the flowing columns. Even the Destroyers wavered. And now, down in the darkness, something tangible moved...

The clan faltered and began to draw out behind Ran in a lengthening column. Dagon, who had swam so far in a daze full of flickering anger and flickering terror, now came almost to a stop and said irresolutely, "There's danger down below. I saw something move. I'm not going any farther—"

Voices echoed him. Ran could have named before they spoke exactly those who would always echo Dagon.

"Yes, something moved...I can't make it out...it's too big...shall we run? Shall we hide?"

Dagon's mind cast out wildly, searching the cliff-sides. "This is a trap," he said. "But there are caves here. We could hide in the caves. Shall we run? I think we should run—"

Only Ran hung silent, paying no attention. He was searching the Deep for the outline of that vast, dark, moving shape below. He said softly, "Wait here. All of you—wait. I must go down alone to find what this is. Watch the Destroyers, but don't run until I give the word. There's plenty of time yet. No matter what happens to

me, I'll have time to give you the word. Elders, keep the clan together..."

THE TREMENDOUS columns of "Thought" rolling upward buffeted him from side to side as he sank. The funnel of rock narrowed. But it did not narrow to a close. Now he could feel and taste and sense fresh currents of seawater flowing gently upward past him, from some farther open space below.

This was not a dead end, after all. That much of his conviction was proved. It occurred to him uneasily, as he strained all his senses downward toward the vast shape below, that in his last, desperate fight to preserve mankind as a rational, thinking species, he had led them here by the blindest of instinctive convictions. . . . That was a gateway in the rock, far down. His questing senses found the opening. But the gateway was blocked; something hung there, rolling a little in the waters.

He could see now the dark, gigantic outlines of the "Thinker."

Stilling his thoughts, hugging the wall, Ran slipped quietly downward. But he need not have troubled to be quiet. The thoughts rolled upward, ignoring him as they ignored the dim lives of the sea-plants, and the lifeless rock itself. Serene as the planet they unfurled and rose, moving as majestically through water as the planet through space.

This was the guardian. It hung brooding in the gateway, thinking its own mighty thoughts and ignoring all things human and inhuman.

But it was alive. And Ran's senses, testing the water delicately, told him that it was warm-blooded life, like his own. Also if it ignored him, at least it did not threaten. But it blocked the gateway, and the machines were sinking inexorably.

He did not want to go forward. His heart was thumping with awe and terror—terror of the unknown and awe for the sheer size of the "Think-

er," and for its majesty. He knew it, now.

But he had to go forward. He made himself sink, until the bulk of the "Thinker" rose like a mountain above him. Its head was a sloping cliff; the "Thoughts" rose unwaveringly out of its deeply-hidden "mind," out of the infinitely deep and complex convolutions of its "brain"—so much deeper than man's ever was, even in his greatest days.

It had no face at all. Leviathan has never had a face. Like his thoughts, he has always hidden his face. There has been only the vast, enigmatic, smooth brow with the eyes set on opposite sides, looking far out into separate fields of vision. Leviathan fronts two ways.

Ran sank until he hung level with the quiet eye set low down on the cliff-side of the head. He hesitated there, searching the silence of the unwinking gaze. If it saw him, it did not heed. With the nearer vision it regarded the water and Ran and the rocks as one, disinterestedly. With that farther eye, who could guess what unfathomable deeps Leviathan brooded upon?

Earth is a very old planet.

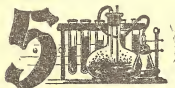
There are chronicles that relate creation's story, and name Leviathan the first of all created beings. *God created whales, and every living creature.* Long ago, when the chronicles were new, Leviathan was the most awesome of all living things. *His eyes, say the chronicle, are like the eyelids of the morning. His heart is as firm as a stone. Upon earth there is not his like, who is made without fear.* And that was long ago. Mankind had changed greatly since then.

So had the whale. . . .

Ran hung humbly before Leviathan, at the gateway to Leviathan's hidden realm, looking up without hope into that unheeding eye in the mighty cliff of the brow.

He swam the seas, said Melville, before the continents broke water. . . . In Noah's flood he despised Noah's Ark,

and if ever the world is to be again flooded like the Netherlands, to kill off its rats, then the eternal whale will still survive....



THERE WAS a sudden tumult above, where the tribe waited. Ran laid all his senses backward and upward for a moment, as an animal lays back its ears without turning. Dagon's strong, terrified cry came loudest. "They're coming! They've cornered us! Look—when they pass that rock they'll sight us. We must run! Run! What are you waiting for? Run, I tell you, run!"

A confusion of thoughts boiled up in answer to him. No one was sure, now, why they did not run; not even the elders could see escape, upward or downward, whether they ran or waited. Their leader had not offered them any hope they could recognize. Only Dagon's urge to wild flight made very clear sense at this moment. Flight, at least, is easier than standing still while death comes closer and closer.

"The caves!" Dagon screamed. "Hide in the caves!"

Ran gathered himself in the water, turned and shot upward with powerful strokes, the surge of the mighty "Thoughts" bearing him buoyantly with them. The clan scattered wildly as he drove a headlong course into their center.

"The Destroyers!" they babbled at him. "Look up! When they pass that rock—" The thought dissolved into sheer wordless terror, but other minds took up the clamor. "Where can we go? What can we do? Tell us quickly, before we die!"

"We go down," Ran said, making his thought as calm and powerful as he could, unconsciously trying to model it upon the strong tide of Leviathan's "Thoughts" that tossed them all

as they hung there. "Down. Follow me."

Without waiting, he turned over in the water again and drove himself down with strong, determined strokes. He had no plan at all; he went by instinct as unreasoning as Dagon's. He was sure of one thing only—this was the last choice left for man. While responsibility was his he must fulfill it, and his duty was keep the clan together, to keep it human, to hold stubbornly the burden of man's heritage.

Waveringly the clan came after him, Dagon last, all their minds dim with terror but ready to seize upon even this frail hope until it proved quite futile.

The dark, tremendous "Thinker" still hung quietly in its gateway, one brooding eye turned toward them, one hidden in its other facade, gazing upon realms they could not even imagine. If the whale has a double mind to guide its double fields of vision, then neither mind dwelt even for an instant upon the exhausted little band of fugitives whose kind had once ruled the world.

They hung there, shivering in the water.

Ran swam forward, looked up grimly into the eye. He gathered together what power of the mind remained to him in his weariness and his fear. If he could only penetrate that vast abstraction, speak to Leviathan as one reasoning being to another....

"Our enemies drive us," he told Leviathan in simplicity and directness. "May we pass?"

Leviathan's eye did not change. The gigantic "Thought" rolled upward, unheeding.

Dagon screamed at it, a wild, shrill, animal cry. "Let us by! Let us by!"

He might have been a barracuda or a moray, for all the answer Leviathan gave.

The clan took up the screams, filling the water with a welter of incoherent, terrified thoughts, cries for help, cries for an open path, simple cries

that were mindless with the fear of death. But they spoke to no listening ear. Leviathan had heard sea-beasts scream before.

So there was no escape. The clan could not go forward, and it could not go back. They could only hang there seething and shrieking in the trap to which Ran had led them, until the first of the Destroyers sank past the rock that hid them...

WHEN DAGON caught his first glimpse of that terrible shape above, his shriek drowned out every other cry. He whirled in the water, beating a froth of bubbles, darting wildly for the honeycombed wall.

"Run!" he screamed. "Hide! Hide!"

That command made clear sense to the tribe. Ran's had not. They exploded after him, scattering in all directions, mindlessly bumping against rocks, against each other, shrilling their terror without even knowing they shrilled. The panic of all driven things was on them, and they ran straight into the jaws of their pursuer.

Only Ran lingered, gathering up all the strength of his mind and all his urgent feeling of responsibility for the clan which he had so stubbornly led to their destruction, following an instinct he had never known before.

The power of his mind was tiny, contrasted with the tremendous latent power of the whale's. But it was all he had. He drew every ounce of it into one point of urgency and hurled it against Leviathan. He tried to frame no words, no appeals. He was simply seeking to pierce that vast abstraction, to force Leviathan to recognize the operation of another thinking mind in another warm-blood brain.

Ever so slightly Leviathan stirred in the water. Its "Thought," rising in a tremendous column like coiling smoke, wavered minutely sidewise, toward Ran. He felt the touch of it, burning with a power so mighty his whole mind reeled away from that scorching contact. He could not even be sure

whether deep down in the incredible bulk the hidden "Thinker" turned slightly, contemplatively, toward Ran.

"Help us!" Ran said silently and with all the violence he could command.

The eye, like a window set low in the cliff-side of flesh, seemed to waken just a little. Ran could not guess if it saw him, or if it heeded what it saw. He knew it would not matter in a moment or two, for he could judge by the tumult above how close destruction was.

He hurled one last thought of violence and entreaty at the bulk which blocked the gateway. "Help us now!" he cried. "Help us now!"

Then he doubled in the water, drew his legs strongly beneath him and shot upward after his fleeing tribe. His shouting thoughts raced ahead of him, reaching feverishly for all the minds that could still hear him and obey.

"Come down!" he called. "Follow me! Come down!"

How could they hear him, with death so close above them? Dagon's wild, strong shrillings of despair were easier to follow, high up the shaft near the level of the machines. Dagon was beyond reach now; Dagon had passed the threshold and laid humanity aside. But the clan—or much of it—could still be salvaged.

Ran hurled himself upward in a final burst of effort shouting his commands.

To the clansmen they were senseless commands; he ordered them to die, not to escape. Some made no reply at all, only fled blindly upward and away. Others wailed protest, whimpered in terror.

RAN PAID no heed to their cries. He had to get them down to Leviathan, and he had to do it by sheer physical force, since there was no other way. They would not strike him no matter what blows he dealt, for he was—or had been—their

leader. But they would not obey, either.

What followed was homeric, in its way. The welter of silver bodies struggling and screaming in the cold, black water, the tremendous buffets that sent them reeling downward one after another, shrieking, against their wills—all of it was like a struggle in a nightmare. Ran grappled with the young and strong and broke their defences and hurled them headlong toward the depths. He cuffed the protesting sidewise and down. He sent the aged staggering. He snatched children from their mothers' clasps and flung them shrieking into the dark, hurling the mothers after them.

By now the stars were beginning to fall, farther out, in the open water. Now and then, they found a goal, sometimes in a reeling fugitive whom Ran himself had cast to meet destruction. He could not help that; he did not think of it. Nothing mattered now but to face Leviathan with his clan before him, and take whatever came.

High overhead he heard Dagon's diminishing, inhuman screams and the animal cries of frantic terror from those who fled upward, shaping no thoughts in minds that had ceased to be the minds of men.

Ran spared no heed for them. Perhaps they would win a way past the Destroyers, some few of them. It didn't matter, now; they would not be human who fled so mindlessly, even if they won their way to the doubtful freedom of the upper seas. They had left humanity behind them, here in the deeps with Ran and his terrified remnant of the tribes of man. If any destiny remained to mankind, it awaited them below.

Strongly Ran drove his people downward toward the gateway and Leviathan.

The cowering clan that was all of humanity now hung shivering and whimpering before the guardian of the gate. Ran pushed through their swarm, sent out a strong, encircling thought to reassure them if he could, and then

rose before the great eye in the cliff of flesh.

And this time it saw him; it heard, and saw.

For when Ran's enfolding thought went out, it had touched other thoughts than men's. Thinking mind brushed upon thinking mind, and with one facet of the serene, majestic brain Leviathan looked into the face and the mind of man. With its other side and the farther field of its vision, it looked at what no man could guess, then or ever.

A shower of stars fell glittering among the clan as man's last leader hung facing the guardian of the gateway to the world's foundation. For an interminable instant nothing happened.

Then with infinite majesty the whale stirred. Like a moving mountain it rolled forward, the displaced water surging in tremendous backward rivers as it rose out of the gateway.

Slowly, slowly an opening showed in the walls of rock it had guarded. Here was a gateway to the farther deeps. Now mankind could hide.

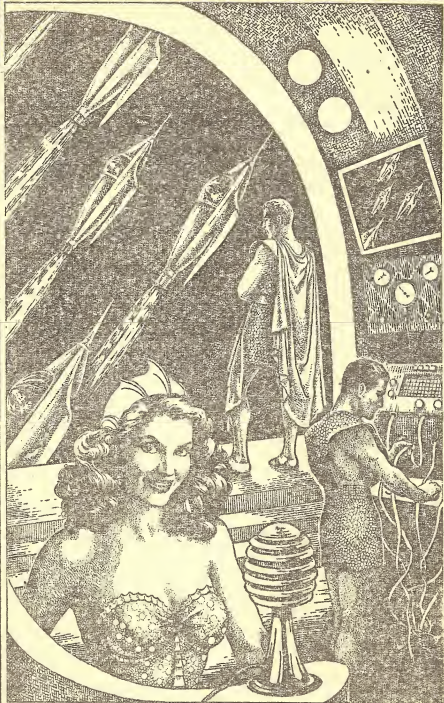
Leviathan rose tremendously in the water, and under it, into the refuge of the planet's deepest foundation, the little shuddering clan of humans darted, one by one. Ran came last.

The whale was a floating fortress above them. Ran gave one deep sigh, knowing his duty done at last and all his responsibility ended. He had kept his people men. He had not failed; the instinct which brought him here was wiser than reason, after all, but it was not the instinct of the beast. Here a door was opened and a circle closed, but not upon man's failure. What came next was beyond Ran's knowledge, but he knew he had not failed.

Now he was free to lay the burden of his heritage down forever.

He bent his head and lowered his shoulders, stooping under the mighty bulwark of the whale as he followed the last men of earth downward into the dark.

(Turn To Page 66)



When the warning bell came, the squadron began to take off, ship by ship, second by second, with a precision that would have been impossible without the master control of the commander's ship.

The Black Alarm

Steve Hagen was determined to live his own life, and he chose the dangerous career of the Guardians. But was he as free as he imagined himself to be?

FEATURE NOVEL OF TOMORROW

By George O. Smith



TWENTY years as private secretary to William Wrightwood had prepared Miss Peters to meet any contretemps except the angry,

purposeful arrival of Steve Hagen, who strode through her outer office with no more than a nod at her, and opened the door to Wrightwood's private office.

"Is this another of your tricks—" roared Steve, cutting off his voice by shutting the door behind him abruptly.

Miss Peters had a quiet nervous breakdown, for Hagen was William

There's a subtle difference between rational and irrational hatred. The latter leads directly to fanaticism—and one definition of a fanatic is "a person who redoubles his efforts after having forgotten his aim".

Wrightwood's stepson, who had renounced his rechristening not long after reaching adulthood. She began to plan an explanation—which would not hold water since Wrightwood was the kind of executive who gives orders not to be disturbed and demands that they be observed. Not even the angry arrival of his estranged stepson was excuse for not having an appointment.

She wondered what was going on, and slyly opened the key of the desk phone.

"You're as devious as a scenic railway and you know it."

"Walter, my boy—"

"My name is Steve Hagen and you know it!"

"If you persist; but to me you will always be my son."

"I wouldn't have you for a father as a gift," roared Steve. "Now tell me how you wrangled this."

"I didn't wrangle anything. Just what makes you think—?"

"This is just too damned trite for accident."

"I've not had any finger in the pie of your little interstellar fire-department, son."

"No? Then explain why and how a rookie out of training school gets an appointment to District One Control Base?"

"You were an honor student, were you not?"

"Not that high. Base One is staffed with men of experience, not raw trainees."

"Never?"

"Not in twenty years, at least. And the last rookie that did it came from school to Base One because he was Marshall Craig's son."

"You should be gratified."

"I'm mad as hell. I want no interference nor help from you—or the likes of you."

"That's not a nice thing to say about a foster father."

"Do I owe you allegiance because I was taken into your clutches at the age of three?" demanded Hagen angrily.

"Your mother—"

"Leave her out of this!" gritted Hagen. "Get back to the subject; just what do you think you're doing?"

"I'm not doing anything!" roared William Wrightwood. "And no one can say that I am."

"If you think for one moment that I'm going to do anything for you—"

The smoothness came back into Wrightwood's voice. "I don't have to play games with new recruits," he said. "Things work out my way in the long run."

"All but one," sneered Hagen; "you haven't been able to steer me."

"Have I ever tried?"

"Hell, yes."

"Then it is the proper responsibility of any man to try to mold and direct the character of his son—"

"Like Fagin, training pickpockets?"

"Son, you've yet to learn that villainy is just a point of view."

"So it may be—but this is my view."

"Wal—Steve, if you insist—just why do you want to join the Guardians instead of taking your place as head of Interstellar?"

"And command a squadron of Large Oak Desks?"

"It takes your kind of brains to run a company as big as Interstellar, but any idiot can buckle on a sword and play pirate."

"So—you've trained me for better things?" sneered Hagen.

"Yes. I have."

"I don't like it. I—"

"I'm not stopping you," said Wrightwood. "Go on and play your game of fireman; I'll wait until you come to your senses. Then, as usual, I'll have my way. But remember—I did not in any way tamper with your affairs. Go look elsewhere for a reason why you were appointed to First Base."

Hagen growled in his throat. "You'd not tell me if you had tinkered," he said. It was lame and he knew it. He turned on his heel and left the office

in as precipitate a manner as he had arrived.

HAGEN WAS awake when his first alarm came. For three days he had been wondering just why and how a rookie could be qualified for Base One; this had cheated him of sleep, and made his waking hours a mad pattern of hard duty and pointless wondering. But when the gong rang in his dormitory room at Base One, he reacted eagerly.

Although this was Hagen's first alarm, years of precision drill had given him the instinctive pattern for action. He dressed in the required time, caught up his equipment and met the stream of men pouring out of their rooms; he followed them from the huge building, out across the spaceport, to the myriad of Guardian spacecraft that awaited them.

Steve wondered where they were going, then realized that it was more than probable that the squadron commander himself did not know yet, and would not know until about one second before the flight took off for deep space. Somewhere, down in the bowels of the huge building, computers were digesting information rapidly, spilling out answers that would have to be summed into an equation before anyone would know the source of the alarm.

It was, Steve knew with the rest of the men, an imminent alarm. The machinery had not blown—yet; it might not blow—ever. It might be stopped by the Guardians before it went—or they might arrive in time to save everything but the mere hull of the ship that sped through subspace with the warp generator heading towards failure because of any one, or two, or a hundred various reasons.

It was Steve's job—with the other Guardians—to save what they could—if they could—and if not, to stop the spread of raw energy.

He reached his Guardian ship and

settled himself into the crash pads. He pressed the button that told the squadron commander that he was ready, and his warning lamp winked into life on the broad lamp-board in the commander's ship; one more light among the rest. Then Hagen waited.

Forty seconds later came the warning bell, and the squadron began to take off, ship by ship, second by second. With a precision that would have been impossible without the master control of the commander's ship, the squadron took off, and reached the speed of light in one second. Then, second by second, the velocity doubled, re-doubled, and re-re-redoubled until the stars of the nearby galaxy were flowing past them like oncoming headlights along a busy highway.

Along with the driving constants that swept them into deep space, angular vectors were applied that would match their velocity with that of the doomed spacecraft by the time they reached it. The computers in the 'constants' building had supplied the master control panel with all the data during the time between the arrival of the alarm and the departure of the squadron.

Steve Hagen peered into the utter blackness of subspace, watching the space-warped cores of stars stream past, watching for the first sight of the faltering ship. It came before the squadron eventually, decelerating as hard as it could.

"Made it!" came the exultant cry from the spearhead of the squadron.

THE FLEET divided. Rescue craft darted around the spaceliner and picked up tracers left by fleeing life-craft; they followed these to give aid to crew and passengers fleeing the imminent blowup.

Tractors latched onto the spaceliner and aided the drivers to decelerate the ship, and the command came: "Goggles!"

Steve snapped dark glasses down over his face just as the intolerably bright floodlamps flared. This was not

to shed light over the scene; any moment now, there would be a flaring hell of raw energy. The floodlamps were to cut the total contrast between the streamers of ultra-incandescence and utter blackness of subspace.

The barriers nosed forward warily, and Steve took the control of his swamper from the master and edged between two of them. They waited, waited.



For theirs was not yet; the trick at this point was to slow the spaceliner down below the velocity of light before the weakened warp generator went out completely. If the tractors could do this, barriers and swampers and nullers would have nothing to do.

Steve watched the spherical warp, a faint boundary about the spaceliner, and tried to measure whether it was collapsing faster than the speed was diminishing.

And as he watched, it twisted out of its spherical shape. The tractors hurtled back, their beams skewed out of grasp by the twisting of the space warp, their straining drivers hurling them with the release of resistance.

The warp diminished, and the nose of the spaceliner pierced it—

Exposing gross matter to universal space where gross matter cannot exceed the velocity of light.

The mass of the exposed nose increased without limit; the velocity of the nose was smashed back below the speed of light; excess energy poured forth in raw radiation; the intolerable mass curled universal space around it and radiant energy circled the curl.

The artificial space warp—still enclosing the ship that travelled a hundred times the speed of light in subspace—folded over the slowed nose of the ship, buckled, and burst like a soap

bubble. The rest of the ship rammed into the curled space and added its mass-energy to the vortex.

A burst of energy flared forth, hit the planes held by barrier ships, flattened against impenetrable planes of force, and hurled the barrier ships back. Their drivers fought, straining to contain the exploding gout of twisted space. Around the edges of the planes seared tongues and sheets of energy.

Steve fanned his cone wide, and he had no time to watch the rest of the swampers dart back and forth to suck away the long reaching tongues.

The warp exploded, hurling bits of its own tangled space invisibly, to emerge as isolated bursts that raved and grew as the twisted space strove to smooth itself out. Nullers darted back and forth, hurling spherical bombs of energy that nullified the growing flames, and the barriers crept forward once more, containing the main vortex.

Steve joined the maelstrom of Guardians that circled and looped through space to kill off the spread of vortexes; he saw Halligan's ship race past his nose and watched a streamer of flame reach out and lick the flank of Halligan's swamper. The skin curled off and fed the flame; air from the ship fanned it out and gave it direction.

Halligan limped away as Hagen swept his cone over the tongue, killing it.

He looked around for more, but saw that the most of the job was done. It had come suddenly; one moment the sky was filled with flowing globes of intolerable brightness and darting ships; then the islands of energy died—apparently in the length of time it had taken Steve to wipe out the tongue that licked at Halligan.

The Fleet circled—watching.

THE BARRIERS had enclosed the main warp in a faceted enclosure, their barrier planes intersecting to make a complete prison. Then, in

through the surface of the volume went nullifier bombs; once more space exploded as the main vortex was broken. Then it was dash, blot-out, and circle; dart, dodge, and wipe away tongue and finger of flame again until the last scintillating trace of vortex was gone.

Steve wiped his face.

"Halligan!"

"Check, Cap'n."

"Y'all right?"

"Shook up but alive."

"Can y' make it back?"

"I'll be late but I can make it."

"Hagen!"

"Yes sir?" said Steve.

"You follow Halligan for safety."

"Cap'n, maybe I'd better have Norman," came Halligan's voice.

"Hurt worse than you admit, huh? Okay, Norman, you heard him. Hagen, this is no slur; you'll have your chance when you have more savvy."

"I'm aware of my inexperience," said Hagen.

"We'll let you get experience enough; stay with the wipe-up squad."

"Check."

Hagen felt a bit miffed, but he knew that he should not be hurt. This was his first alarm, his first job in the Guardians. Halligan had every reason to prefer a more seasoned man to a raw recruit when his life depended upon it.

Then, automatically, Hagen felt better. He was, at least, appointed to help the clean-up squad. They would patrol this space at random, watching for a trace of flaming vortex. If none appeared for two hours, they would watch for a total of six to be certain before going home. Minute vortices, space warped into a complete circle with a flow of radiant energy coursing around in them, might maintain for some time invisibly, feeding and growing by their contact with the discrete atoms of interstellar space, attracted by the monstrous force of gravity centered on the vortex. If left unswamped, they might grow into a real menace to navigation.

But the barriers would blanket

space, and the swamper would be ready to wipe out any vortex broken against the plane of force. Then, their job done, they could go home for a well-earned rest.

Hagen watched the squadron reform, watched waiting rescue craft collect from the distant flights, then watched them disappear, heading back the way they all had come. He felt a bit of panic; he felt alone in the depths of interstellar space in a unique spacecraft that was sixty percent accumulator, fifteen percent driver, and fifteen percent swamper-beam. The other zero-percent was put there for his comfort and protection. He was one hundred and sixty pounds of analog computer, employed to serve a monstrosity of spacecraft built for a single purpose. He was there only because no man could cram enough binary circuits and analog differentials to equal one thousandth of the human brain into one hundred and sixty pounds and a few cubic feet.

But Steve Hagen was a Guardian!



STEVE'S return with the clean-up squad was made without mishap. It had been lonely work, for the half-dozen vortex-fighters swept the skies singly, roaming back and forth along the millions of miles across which the explosion had taken place. Sometimes they dropped into the realm below the speed of light to wipe out a bit of wispy cloud that looked as though it might be trouble brewing in the more firm structure of universal space. But mostly they raced back and forth at speeds that multiplied the velocity of light by many times. Nothing they saw reacted with their damping beams; nothing splashed against the nullifying bombs—and then, these, too, had to be destroyed lest they start a counter-vortex of their own.

Steve had been too busy during the mop-up operations to pay attention to his own feelings. On the way home he had taken time to think, and then came that first recoiling in abject fear. Utter emptiness, absolute nothing, sheer black space closed down upon him with an inherent fear as strong as the inherent fear of falling. Man had a million of years of evolution on earth, with a constant of one gravity pulling him down onto something that his senses told him was flat, hard substantial, and everlasting. Of all that man could count upon, the earth was the one thing that he could consider unchanging.

But here in space, with no solid planet below him to rest upon, to succor him and give him strength, Steve felt the abject panic of helplessness. The mighty power leashed in the room behind him was invisible; the surging drivers that hurled him along at a thousand times the speed of light operated without a murmur, a tick, or a sign of their positive power. The warp-generator that folded space around him to create his own subspace, a feat of gravitic energy that not even Sol himself could perform, gave him no comfort.

So Steve fought panic and was glad to see the first sight of Base One. He landed in his allotted space, climbed down out of his swamper shakily, and walked off the spaceport slowly, hoping that Lois Morehouse would be there. She was—standing at the edge of the landing area; she waved to him and Steve changed his course to go towards her.

Lois was a good-looking girl of about twenty-three, a bit too healthy-looking to suit the present standard of fragile beauty. She glowed with health, could send a sizzling backhand, sink an iron shot, or ride water-skis with the best of them. She was the daughter of Commissioner Morehouse, the nominal top-brass of the Guardians, and as such was the eye of every single man in the squadron. Just why, in three or four days, Lois had found a

raw rookie interesting had never occurred to Steve to question.

For while Hagen had formally and legally renounced his stepfather and his stepfather's business and way of life, Steve could not renounce the upbringing his stepfather had given him. Steve had none of the truly, apologetically, deferential bearing of the average rookie, who usually came of families of average means and worked his way up. Hagen had attended the finest schools, had gone to the best college, had played football and been sought-after by three leading fraternities. None of this had made him a snob; it was just that he saw nothing odd or upsetting about the fact that an attractive girl found him interesting. Had he been brought up according to his present financial, emotional, and social status, Steve would have been inclined to retire and leave the pursuit of Lois Morehouse to men who had experience and position.

HE DID NOT realize it himself, but Steve Hagen was trained to be the kind of man who felt no shyness at walking into the office of the Big Brass and sitting down to tell him what he thought. So he saw nothing odd about walking over to Lois Morehouse and smiling affably.

"How was it?" she asked him.

"Rough," he said. "Shucks, Lois, I wouldn't know whether it was rough or whether it was a milk run; this is the first I'd ever seen."

"How was the trip back?"

Steve laughed nervously. "I was never so glad to see solid planet before in my life."

"You sound as though this were your first space run."

"If it had been, I'd be a screaming imbecile by now. Luckily, I've been in space a lot; it's just that this was the first time I've made it in a little over-powered can, completely alone. Brrrrrr."

Lois smiled at him. "What happened on your first practise drill?" she asked.

"We didn't go as far."

"But—"

"Well, I'd had that experience softened, too."

Lois nodded. Steve said: "I could use coffee. Want?"

"I want, Steve. But dad will be looking for me," she told him wistfully.

"Good Lord, Morehouse doesn't make you work?" he exclaimed in mock horror.

"What did you think?" she asked him with a quizzical glance.

"I thought it was a case of plain, everyday, common, down-to-earth nepotism."

"So do a lot of people, but it isn't true; I'm told that I earn my salary."

Steve laughed. "I didn't intend that crack of mine to rub salt in an open wound."

"Oh, I'll not take it seriously," she said. "But you go on and saturate yourself with coffee; glad you made it all right."

"See you later," he nodded, and turned from her to walk briskly towards the mess. Seeing Lois had steadied him as he had known it would. Hagen was not given to mental analysis, either of himself or of others, but he did realize the truth of what his professors had taught him in psychology. I—that the feeling of kinship with good solid earth and the regard of a woman were the absolute basic things that go toward making a man feel well in heart. So long as he can retain these—

"Steve!" came the call. Hagen whirled instantly and held up a hand to Lois; he turned and started to cross the space between them but Lois waved him back. She cupped her hands to her lips and called: "You'll be at the brawl Saturday?"

"Yes," he called back. "You gotta date?"

Lois shook her head.

Steve beat upon his chest, then polished his fingernails on the lapel of his leather space jacket.

Lois nodded, shaking her auburn

hair vigorously. Then she turned and headed towards the office building, and Steve went on towards the mess. Steve Hagen was feeling positively cheerful.

●

He was still there when Halligan came limping in, to land uncertainly in his accustomed spot. Like the rest, Steve went out to see the man, and they all waved him home, surrounding him and pelting him with both handshakes, mild insults and warm greetings. Halligan replied to the insults stoically, grinned at the rest, and peered around the group until he saw Steve. Then he shouldered his way through.

"Steve," he said seriously, "I did not mean anyth—"

Hagen smiled. "Naturally," he said, accepting Joe Halligan's hand. "I'd have been no use to you and I know it. I'll need some more practise."

Halligan laughed. "I need coffee, have some on me?"



"I'll go along for the walk," said Steve. "But I'm loaded to the space-valves right now."

"Come on then, and watch a hungry man tear into a steak."

"I hope you're hungry enough for stew."

Halligan grunted. "Watch a hungry man tear into a plate of stew, then."

Everybody laughed, and in the midst of it, Steve asked: "Aren't you going to check in?"

"I suppose regulations call for it," said Halligan cheerfully. "But Cap'n Charlemagne knows the score, and the commish has heard it from him. Both of them know I'm in safely; also,

they'll both feel that an hour of relaxation will do both me and the service more good than an hour of recounting the same tale. I'll go in later."

The crowd began to disperse, and Steve followed Halligan towards the messhall. "You can stand some practise," mentioned Joe. "And you'll get it. But I'll take you on for a round or two if you like."

"I'd like," nodded Steve. "And thanks."

"No thanks necessary," said Halligan. "Just repayment; that was a fast job of wiping out that streamer that caught me."

"I didn't think—"

Halligan laughed. "Of course," he said cheerfully, "what I'm really after is for you to get experience enough to prevent it. Now, you see, after a year or so of vortex-fighting, you'll develop some sort of second-sight or other, and the next guy that runs in the way of a streamer, you'll know what to do about it before the poor bird gets clipped. And if not, you'll not wait until the guy gets out of the way before you squelch it; your aim will be good enough to shave the paint off the hull before the vortex streamer gets it."

"I was afraid to cut too close."

"We'll practise with light beams until you can write your name in three types of script," predicted Halligan. "Then—hello, Edwards. Joining us for coffee?"

Roy Edwards looked unhappy as he stopped before them. "Later maybe," he said. "We've got to attend the inevitable."

"Oh nuts. On an empty meat locker?"

"You might toss a coin; you'll not be needed at the same time."

Steve nodded. "You stoke the boiler," he said to Halligan. To Edwards, he said, "I don't know what this is all about, but Joe's ready to eat raw bear. I've eaten."

"That'll be fine," said Edwards cheerfully. "I hate to bust in on this love-feast, but there's plenty of time

later. Grab your chow, Joe, and come in as soon as you can."

Halligan smiled. "Sure thing. And kid, don't let a lot of pompous pin-stripe-and-spats scare you. Treat 'em as you'd treat one of the Guardians; so long."

"What's up?" asked Steve.

"About once a year there's a stink over a blowup," said Edwards. "This is it."

"What kind of stink?"

"Charges of laxity, charges of wastefulness, and so forth."

"Laxity?" exclaimed Hagen.

"Interstellar often holds the quaint notion that a more alert outfit would be able to arrive at the scene of the blowup in time to stop it; after all, a spacecraft is worth a lot of moola, and they hate to lose it."

Hagen grunted. "I can't see any outfit getting there before we did."

"Tell 'em that."

"Just how do they think they can create a better outfit?"

"By removing the Guardians from governmental control and making of them a private organization, a subsidiary of Interstellar."

"I don't see—"

"There's a lot of truth on both sides," said Edwards, "but that is not for us to settle. All we can do is to stand up for our own ideals. Just tell 'em what you saw, and what you did; and if you don't let a few facts interfere with a good story, remember that they're ready to discount half of what you say anyway. So—here's the inevitable."



HAGEN entered the office quietly, nodded at Commissioner Morehouse, smiled at Lois, and eyed Howard Forrest with mild hostility. Forrest, the representative of Interstellar, returned his hostility with a stony-cold glance.

It had been years since Forrest and

Hagen had met. The last time had been a hard scene; Forrest had come to Hagen to ascertain the depth of Steve's feelings regarding the renunciation of his name and heir-apparntship to the commercial empire of William Wrightwood. Forrest, a clever man with words, had done some of the finest orating of his life at that time, weaving a verbal web glowing with the glories of running the whole show. He had given Steve a very rough time.

Steve had yet to learn the first principle of politics, which is never to admit for one moment that your opponent could possibly be right, or have an idea that keyed with your own. Steve had attempted to answer Forrest, and all he got in reply was hard-shelled argument.

The slightest hint of Steve's that Government had any rights at all was greeted with fine rhetoric and impeccably presented logic to the effect that Hagen's viewpoint was none other than a leaning towards Statism, Socialism, and ultimately Communism. Steve resented this. Yet his lack of preparation for rebuttal left him unable to reply with good soundness. Hagen had no intention of supporting any form of governmental control of everything. He believed in the desirability of self-sufficiency and free enterprise, but he also felt that his stepfather had taken this freedom as far in one direction as downright dictatorship would lead it in the other direction.

Forrest had waved away the latter and had fastened upon Steve's support of free enterprise, pointing out that a group of trained vortex-fighters with a personal interest in their job would be more inclined to do the job more thoroughly.

Forrest had finally reduced everything to a matter of dollars and cents and initiative, leaving Steve only with the weak defense of retreating inside of a verbal shell and replying that he wasn't going to return because he did not want to return and that was that. Howard Forrest had left still making predictions about the future. Now,

Forrest looked at Hagen with eyes that saw him not as a former heir to the throne of Interstellar, but as a complete stranger.

This was as Hagen wanted it.

He was Steve Hagen; not William Wrightwood Junior, and he did not want to own up to any relationship with either his stepfather or Forrest. Steve decided to be curt, cold, concise, and distant.

He had little chance to be any of these. He was asked to deliver his opinion of the recent eruption, and he did so, addressing alternately his superiors, Forrest, and three stony-faced gentlemen who had been introduced as members of a fact-finding board to whom Interstellar had complained.

Then Hagen expected some form of cross-questioning.

He got none. When he finished, Commissioner Morehouse explained that this was the opinion of a new man unbiased by experience, and drew the teeth of any argument by admitting calmly that any Guardian had every right to talk completely in favor of his chosen service.

Hagen was then excused; he left after tossing a sly smile at Lois.

But once outside, Steve paused. It was not like Forrest to use him so calmly; this would have been a fine chance to blow an argument full of holes.

Unless—

Unless Forrest realized that Hagen's position with the Guardians was of no great importance. At least at the present time.

Which meant that Hagen's position might be of great interest in the future. This implied that Forrest, Wrightwood, and Interplanetary had some plan in mind. Theirs was more than getting Steve Hagen back into the fold; that might have been accomplished by several means. Certainly Wrightwood and Interplanetary had enough of power and money to place a very deep curse on any man who befriended Steve. He would be forced back from sheer want, from sheer

inability to fight an organization so strong that it would not permit any other outfit to hire him.

Nor was it a matter of waiting until Hagen came to his senses.

It implied some sort of deep-laid scheme, and some of it smacked of Hagen's call to Base One instead of being sent to the Galactic Equivalent of Brooklyn until he knew his way around. He smelled the fingers of politics once again, and decided to step upon them.

STEVE TURNED from his walk down the hall and went to Captain Charlemagne's office.

The squadron leader looked up when Hagen was announced, and smiled genially. "How did you make out?"

Hagen shrugged. "I told my tale in a dry voice, and I don't know whether it went over or not; they didn't ask me any questions."

"They never do. They just compare the notes they make from one man to the other and weed out discrepancies. That's why all of us being questioned are called in one at a time. I doubt that you made any errors, Steve."

"Thanks, Captain Charlemagne." Hagen wanted to call his leader 'Cap'n' like the rest, but felt that it was not his place to be too bold at this moment. "But I came here to ask a question."

"Go right ahead."

"Why was I called to Base One?"

"You've been wondering?"

"Of course. I came off with a high grade in training school, but not that high. So far as I know, I'm the first rook to be called directly from training to Base One in many's the year."

"That's true," nodded Charlemagne.

"You weren't to be told yet, but since you ask, there's really no harm in your knowing; you're going to be assigned to a sort of special routine once we get you some experience in space."

"Special routine?"

"Nothing very grandiose, Steve. We've partly been forced and partly

been convinced to revise our inspection procedure. Formerly, routine inspections have been carried out by men convalescing from injuries, or men released from active duty for one reason or another. It has been pointed out that such men—usually men of long experience, can hardly look upon such a routine job as anything but punishment, or a sop tossed to an invalid, or some other odious proposition, and they can hardly be expected to execute such a job without some bias. For instance, a man put upon such a job because of some minor infraction of the rules will smart under this punishment and take it out on spaceport managers, liner captains, and so forth—or will bugger the works by overlooking the possible danger spots. An invalid cannot be expected to do the job thoroughly. A pensioner is usually old enough to be less active."

"I see; now we're making this a part of initial training?"

"Right. And since Base One is staffed with experienced Guardians, we needed a newcomer to handle this job; you're it."

Hagen smiled. "When do I start?" he asked.

"Normally we'd start you after your second time out," said Charlemagne. "But since you've been told of your assignment, I see no reason why you should sit around day after day waiting for it to arrive. If you think you can make a long jaunt from star to star without getting the screaming meemies from space loneliness, you can start tomorrow."

"I think I can."

"Larrimer thinks you can lick it," smiled Charlemagne; "he said you



COMING NEXT
ISSUE

TIME GOES TO
NOW

By Charles Dye

ran the swamper as though you'd been with the mop-up squad for years."

"I hardly think so."

"You're a well-liked rookie," said the captain. "You'll make out. And," he added ruefully, "we'll be looking for another rookie in not too long a time. We wouldn't care to keep a potentially good man running errands too long. Just long enough," he said seriously, "so that he knows what the score is."

STEVE FOUND this was tedious work. Furnished with an itinerary, Steve spent the first day on Planet III of the star nearest to Base One, prowling in and out among the planetary installations of the Interstellar Company, finding nothing worth reporting. Pilots and engineroom mechanics knew that their lives depended upon the proper maintenance of their equipment, and they behaved accordingly.

Furthermore, most of them resented Steve's insistence upon inspection because they deemed it a reflection on their workmanship. The fact that he admittedly knew less than they about the finer points of warp generators made it impossible for him to pay more than a cursory compliment as a sop to the interference.

On the other hand Hagen occasionally located a weak spot and pointed it out to them; some of them were grateful, and some impertinent. Of the former, they nodded sagely and mumbled something about beginner's luck or the familiarity that breeds contempt. Of the latter, their acknowledgement of the weak spot came either as something admittedly less than perfect but not really dangerous—or that they knew it was there, but had not reached that spot in their repair routine. Steve could not argue any of these points, so he clamped down on the sharp answers he felt coming up and passed it by with only a scowl. Had he been less certain of himself, Steve would have been

ruffled or possibly hurt by this sort of treatment. But Hagen was the kind of man who knew that he was not completely capable in such things—although he was quite capable in other things, which lent the whole proposition some compensation. It is the man who has no particular accomplishment of his own who cannot stand to be pushed around by people who have—or he with the overpowering inferiority complex who *thinks* he has no particular excellence.

Steve had neither inferiority complex nor lack of certain successes; he would study and he would learn, and one day he would speak with authority.

And so it went as the days rolled on and on. His time was not entirely uneventful. The ship he drove on these inspections was a scout model, equipped with space alarm recorder; and although it did not have the automatic scale-model of the galactic sector such as in the main office of Commissioner Morehouse, it did have a manual model. When a muttering call came in on the alarm circuit, Steve would take the time to classify it, to fix it, then to calculate and enumerate which of the stations was going out on the call.

THIS SORT of classifying gave Steve a sort of dull shock. For even though he had known the facts, it took seeing them and calculating them to drive it home. The Guardians were not constantly fighting the great menace; such blowups as Steve had been initiated into almost upon his arrival at Base One was actually few and far between.

Most of these were minor calls. A tramper with a vacillating warp generator would call the Guardians to have them come out to clamp down on the space warp before it blew, or long enough for the engineers to make repair or adjustment. Occasionally the spacecraft would try to drop speed before the warp blew out, and almost make it; in which case the resulting eruption took all of the simple technique of a smouldering fire in a waste-

basket. There were far more calls for *danger* than calls for *blowup*. Ships' engineers, mindful of the fact that the life of every man aboard depended upon the efficient working of the warp generator, knowing that the ship would blow and be lost if it failed, were inclined to call for aid and help at the slightest indication of instability; it kept the Guardians busy.

But that was what they were for. Hagen enjoyed that feeling, although he would have scoffed at any man who accused Steve of harboring a desire to serve mankind.

All Steve cared about was the fact that it was far better to hale a crew of Guardians out of bed and hurl them across space to protect their fellow men than to lose men and material unnoticed.

And Steve knew, too, that blowups were 'headline stuff' and no indictment of space travel. For every alarm that came whispering its troubles across the galaxy, a hundred-thousand people traversed the spacelanes from star to star without mishap. He often wondered how long he would be in this business before he began to shake his head at the chances mankind took. Or whether this sort of bias would take place in him. Certainly, a man living where the dangers are pointed out while the safeties are not noticed should begin to place too much importance on the obvious.

But so far Steve had none of this; he plodded on his job and did it as well as he could, knowing that as soon as he finished this phase of his activities as a Guardian, he would have more interesting work. This expectation dispelled the routine drabness of being an inspector; his off-duty hours were too happily filled to him do more than consider the future.

For Steve could not contemplate the future without thinking of Lois Morehouse. She was interested in him, he knew. And like any man of intellect, Steve was used to thinking of any desirable woman in the light of a possible mate and judging her values and virtues accordingly. But until he knew

more about her, Steve could formulate nothing more than the fact that she was desirable; the big thing was to discover whether it could last beyond the first stages. Steve had known too many girls with a Perfect Thirty-Six—with an I.Q. to match—to place much judgement upon outward appearances.

So, before Steve took on the job of meeting her every morning across the breakfast table, Steve wanted to know more about her. He guessed—rightly—that Lois wanted to find out more about him.

He gave her every chance, starting with the evening of the dance.



HE HAD LITTLE time. The routine of his inspection tours took Steve farther away from Base One as time went on, and Hagen had small chance to do other than run in and out. His spare time was his, of course; Steve was not on twenty-four hour duty. He could have his way in one of two possibilities; he could either stay near the base of operations or he could spend the spare time in space-flight to and from Base One. He did the latter until the running time versus the visiting time ran smack into the Law of Diminishing Returns, at which point he loafed his spare time away on a planet near to his course across the galactic sector. At these times Hagen calmly awaited the future, when he could be back at the Base.

Steve had not seen nor heard from his foster-father since that meeting in Wrightwood's office, and he knew that another meeting was inevitable. Hagen would have preferred to have the meeting on a ground of his own selection where he could choose his own weapons, but this was not to be.

Yet Steve was not totally unprepared when, inspecting one of the larger planetary installations of In-

terstellar, he was asked into the main office. It was not of Hagen's choosing, but it was better than to have Wrightwood land at Base One, where the wily magnate could by word, gesture, and incomplete statement indicate more than the truth before Steve's fellow Guardians. Such a program requires too vigorous a rebuttal; no reply or denial is adequate to remove the doubt that always lingers.

So Steve entered the main office with a wry smile and nodded at Wrightwood. He waited the older man out.

"How are you doing?" asked Wrightwood.

"All right."

"A bit dull, isn't it?"

"Life is often dull," remarked Hagen noncommittally.

"Look, Steve, why not take it a bit easier?"

"What do you mean?"

William Wrightwood eyed Steve coldly. "Now look," he said quietly, "we'll admit for once and for all, that you and I don't get along."

"Well, that's a concession."

"All right, take it as you will. But it's true; for some inexplicable reason you hate my guts—"

Steve grunted. "It's not so damned inexplicable."

Wrightwood sighed. "What's done is done," he said softly. "But take a look at the present and the future instead of the past; view this, honestly if you can, in the eye of an outsider."

"Can you?"

"I can and I have; I've also the opinion of outsiders."

"Do tell."

"I will. You are in what might be called an unpleasant situation. You are the legal heir to the Interstellar holdings whether or not you deny it. You were rechristened Wrightwood whether you try to deny it or not. In the eyes of the world you are my son, brought up by my money and educated by my background. You—"

"Thanks—"

Wrightwood held up a hand to still Steve's sour voice. "Hear me out. In-

stead of acting as heir to my fortune and crown prince to my business, you engage and embark upon a career which is in diametric opposition to my interest. In shorter words, you have left my company in anger and signed up with the opposition."

"Correct."

"So now, possibly to salve your own qualms, you are leaning so far over backwards that you are about to fall on the back of your head."

Steve snorted.

"Deny it," smiled Wrightwood in a superior manner. "Just to prove to yourself and to your superiors, you've been cracking down hard on me."

STEVE EYED Wrightwood sharply. "Seems to me that your underlings might be more considerate of your holdings," he snapped.

"What do you mean?"

"It doesn't take a lot to keep things ship-shape. Faulty wiring, frayed connections, generators with rattles, loose bearings, electron tubes working past their safety-period. I found three hydrogen thyatrons running at one-and-one-half times their rating because they were so old that they were beginning to get sluggish. Just last week in one of your ships.

"Sure," sneered Steve, "you can get another couple of hundred operating hours out of a tube by running the filament hotter than normal when it starts to get weak. But you're running a spaceline, not a spot-welder; when one of them blows, it's a job for the mop-up squad. Someone's cutting corners, saving a hundred bucks worth of tubes for a couple of weeks doesn't pay for lost lives and—"

"I'm aware of the safety factors," said Wrightwood angrily. "The trouble with these safety factors is that they've been set up because someone in your outfit took the figures presented by the tube manufacturers and divided them by two. Instead of running on a hundred percent safety factor, you've forced us to run on five or six hundred percent. And do you know why?"

Steve did not reply.

"Because one of the guys who makes standards for the Guardians holds some stock in a tube company."

"That's a lie!" roared Steve, slamming his fist on the table.

"It's no lie; it's just a fine way to raise the sale of tubes. And tubes are only one part of the whole. Now—"

Steve roared again. "When the lives of a couple of hundred people depend upon a chunk of wire the size of a piece of string, heated to incandescence by electric current, any safety factor can damn well afford to be trebled and trebled again!"

Wrightwood shook his head solemnly. "This isn't all," he said; "this is only the beginning. The whole adds up to a staggering sum. But I didn't bring you in here to hurl accusations at you. I merely want to ask you to use a bit of tolerant common sense."

"Now I'm lacking in com—"

"Now, now, let's stop roaring like a ruffled lion. The only common sense you lack, Steve, is the sense that should tell you that running Interstellar is more self-satisfying than being commissioner of the Guardians. But look. Let's for the moment admit that a ship—called X—comes into Tandrel and as it arrives the time-meters on the thyratrons says that their safe life is up. What then?"

"Replace 'em."

Wrightwood nodded.

STEVE LOOKED at the man quizically. If one of the first tenets of argument is never to admit for a moment that you are wrong, then why was William Wrightwood doing it?

Wrightwood shrugged. "Replace them," he agreed. "However, remember the following items:

"One: Thyratrons such as we use are manufactured on Earth; that's a long way from here.

"Two: If we replace the thyratrons on Tandrel, the replacements must be shipped out from Earth as unpaid cargo, and entry-duty, taxes, shipping charges, and the rest of the hidden costs cause an increase in their price.

"Three: Since the 'Life-Service' of the tube contains a couple of hundred percent of safety factor, why shouldn't some of that safety factor be employed to get the ship back home—maybe ten hours at the most—thus saving a lot of money?"

Steve began to see the beginnings of an attack on the Theory of Limits, against which there is only a dogmatic defence, ending in the reduction to an absurdity, and culminating in the posing of an unanswerable decision. It is sort of like the age-old argument as to where space begins and where being a-p'planet ends.

Being a-space does not begin when one leaves the planet; men flew through the air for centuries before they crossed the void to the other planets. Yet somewhere in the trip across interplanetary space, the first travellers must have traversed first the limit of Earth, passed into Space, and then entered the boundary of Venus.

Where Earth ends and space begins is the Limit; and the easiest thing to attack is this Theory of Limits.

Earth claims legally that the boundary of Her Domain begins at a height of five hundred miles above the surface. This is a dogmatic decision, adhered to because it has been agreed upon by all. So, legally, an orbiting Station at 499 miles is not in space; while legally the sister Station operating at 501 miles *is* in Deep Space. Factually, each of these stations lie within two-tenths of one percent of being in, or out, of space; and since the surface of the Earth is far from being as smooth as a sheet of plate glass, the Limit is based upon Earth's somewhat arbitrary Sea Level.

Similarly, if a tube's life is rated at ten thousand operating hours, and a safety factor is accepted at five hundred, can the tube be deemed inoperative at five hundred and ten hours? Especially when these 'over-age' tubes are returned to Earth or to whatever planet can use them and resold as 'Used' tubes to factories and installations where their failure will not cause

a call-out of the Guardians. Many such 'Used' tubes, Steve knew, gave a total of twenty thousand hours of service.

But Steve had his answer ready and waiting. "A few hours more or less isn't of vital importance," he said; "but what about the really weak jobs?"

Wrightwood nodded. "That particular gentleman has been reprimanded. But since then you've grounded three of my ships with less than a total of twenty hours overtime."

Steve shrugged. "Just so they wouldn't end up with five or six thousand hours on them—waiting for a lazy day on Earth to change them at leisure. Especially when the ship has been Earthing every week or so."

"But why be more than normally hard? Why attack Interstellar harder than the rest?"

"I don't; I have my orders and I'll see that they're carried out."

"You can't think for yourself?" sneered Wrightwood.

"I can and I do—and I think we're right."

"You'll change—when you learn what they're doing to you," said Wrightwood.

"What do you mean?"

Wrightwood leaned back calmly. "I'm big enough of a man," he said slowly, "to let you go ahead and join the Guardians. But the Guardians are afraid of you."

"Bah!"

"Look here," snapped Wrightwood, sitting forward abruptly. "You raised hell with me because you thought I was meddling in your life. I wasn't; the only reason they got you entered at Base One is because you're too bright to drop without an explanation, and the Guardians were afraid to let Steve Hagen go to some remote base because Hagen is none other than William Wrightwood, Junior! They want to keep a sharp, official eye on you, and hand you stale jobs until you get tired and quit. Because they haven't got a plausible excuse for tossing you out. So I—"

"That's a lie!" roared Steve.

"Okay," chuckled Wrightwood. "Just watch what happens when you make a fumble. Or," he said slowly after a pause, "do you know that already? Is that why you're leaning so damned far backwards?"

"Is that all you've got to say?"

"Isn't it sufficient?"

"It's too much."

"Call it that, then," grunted Wrightwood. "I'll wait, Steve."

"I'll see you when hell freezes over—"

"Or when it blows up in your face," warned Wrightwood. He said it to Hagen's retreating back. Steve had had enough and he was leaving as quickly as he could.

STEVE FUMED inwardly. It was sheer frustration; nothing would have satisfied Steve so much as to step forward and send a hard fist into Wrightwood's face just to feel the skin crush and the bone beneath it grate against his knuckle. But against that desire was too many years of viewing William Wrightwood with the awe and fear that a youth holds for an adult who has authority and power over him. As a youth, Steve had neither the physical ability nor the mental agility to cope with his foster father. Now that the tables had been turned by the years and Steve could handle William Wrightwood physically, Hagen understood that physical supremacy would hurt Wrightwood, but would bring only contempt from the man instead of surrender. And the years had given Wrightwood their wealth of experience and mental advance as the years had also aided Steve. Hagen was mentally on the same par with Wrightwood, while the physical parity had reversed but become banal. So it was frustration to Steve knowing that he could smash Wrightwood's face but to no end effect upon the older man.

Somewhere, somehow, to bring Wrightwood to his knees, Hagen had to do something on his own, of his own, for his own, that would command

the respect and envy of his foster father; preferably something that would advance Steve while clipping Wrightwood where it hurt the most: his business and his empire.



Steve was still fuming about his foster father's suggestion when he returned to Base One. He sat over his desk, writing the reports of his inspections, and constantly repeated the original question: *Was he being overly hard on Wrightwood because he disliked him?*

Once or twice the urge to lighten a report came, then once or twice the desire to make one more damning came; and the result of this was to leave Steve in a quandary.

He wanted to be fair.

But no man can be honestly fair when his emotions are involved; he gave up, filled in the report statements in a mechanical manner, transcribing them from his notes as though he had no opinion other than the notes, and when he finished that, he felt at least that he had not been inclined to color the data.

Finishing the paper work, Steve headed for the mess hall and met Lois on the way. "Coffee?" he asked.

She nodded, looking at him carefully. "What's wrong, Steve?"

"Inspection is not a pleasant job."

"What happened?"

Steve stopped short and looked at her. Lois stopped too, to face him seriously. "Bribery?" she asked.

Steve said nothing.

Lois stamped her foot. "What kind of man is Wrightwood?" she stormed. "You'd think we were doing this for spite instead of for his own protection."

STEVE NODDED. "William Wrightwood is a power-hungry man," he said. "Nothing but being an absolute dictator of the universe would satisfy him, and that would only partially sate him because it is not so much the wielding of power

that pleases Wrightwood. It is the gaining of more and more power."

"I hadn't considered that."

Steve nodded and turned; they started towards the mess again. "What makes a man that way?" she asked idly.

"Frustration of one sort or another," he said.

"And what is Wrightwood's particular frustration?"

Steve snorted angrily. "Something in his psyche insists that the inability to father a son means that the man is less than a man."

"That's ridiculous!"

"Sure it's ridiculous. But it is that sort of ridiculous thing that has caused more war and suffering than perhaps any other single thing. William Wrightwood lacks a son. He has—like Napoleon—married and divorced three women because they could not give him a son. He married the fourth because she already had a son. Then he killed her because she could not produce a duplicate for him."

"Oh Steve—that's hard to believe!"

Steve grunted. "It was not murder—legally," he said bitterly. "But bitterness and recrimination are just as deadly as the knife or the bullet."

"But how about his foster son?"

"Wrightwood tried everything he could to make a real son of him."

"Well, that's an admirable trait."

"Like hell," gritted Steve. "It is all right to accept a fatherless child and bring it up as your own. But no man should try to do the impossible. Wrightwood tried to make a natural son out of an adopted son. It could not work; he cramped the natural personality of the son, forced the child to follow the footsteps of what Wrightwood thought a son of his would follow. So instead of following, the son revolted as soon as he could and went his own way in direct opposition. Two lives crudded up by the overwhelming drive of one man."

"You know a lot of him."

"I should," he said simply. "I'm the son."

Lois stopped short again. "You're—William Wrightwood, Junior?"

"I'm Steve Hagen," he snapped.

"But you're his son?"

"I am."

"But you've never said so."

"No one has ever asked me; and I'm not proud of the fact."

Lois was silent.

"And I'm not running—undercover," said Steve; "I'd prefer to forget the whole thing."

"Then why tell me about it?"

"Because I don't want to operate under a false banner; especially with you. I've said nothing about it because of the natural objection too many people might have if it became known that William Wrightwood's foster son was working among the Guardians. The outfit that has bucked every attempt of his to be gathered into his own little empire."

Lois looked at Steve with a quizzical glance. "But are you here because you want to work as a Guardian, or because you want to strike back at Wrightwood?"

"That's a question that I have asked myself and cannot answer honestly," he said.

Lois nodded quietly, thinking for a moment. "For too many years people have been denying the right of a son to cash in on his father's position," she said. "I see no reason why the reverse should not be true; we should not castigate a son who wants to do the opposite, insisting that he follow his father's position."

"Let's forget it," said Steve. "Life is too short to be filled with bitterness. I'm here and here I shall stay regardless of the inner motive I—"

The outside alarm blared forth in a series of short and long blasts. Both of them stopped to catch the code, which called for an alert at Base One while Base Seven handled an alarm. Seven might need help; so the personnel of One came tumbling out of their relaxation and made ready, just in case.

"That's not you, Steve," said Lois. "But it's me. Be seein' you."

"No," he admitted, "but there's nothing that says I can't go along and help if I want to. I'm unattached when I'm off of my inspection job. A little action will make me feel useful; I'm tired of arguing with techs about crystallized joints, frayed insulation, and unstandardized measuring equipment."

Lois nodded cheerfully and headed for Morehouse's office; Steve headed for his quarters to prepare for the possible recall alarm.



IT CAME, that recall alarm, a half hour after the first. The men at Base One tumbled into the ships and ripped into the sky, Steve following the flight closely in his inspection ship. The whole crew went anxiously, cheerfully, for the recall alarm meant that the threatened ship might possibly be saved.

The flight from Base One arrived on the scene forty minutes after taking off. The ship was in subspace, ripping along without drive at three or four hundred times the speed of light, still encased in the warp.

But it was spacewarp held up and maintained by the conjunction of warp-planes forced edge to edge by surrounding Guardian ships. The rescue crew had gone to pick up the people who had flown the ship in life-craft; the swanpers and barriers were sticking close to go to work if the hard-held warp failed. A mishap on the part of one pilot holding the warp would fracture the englobement; this was as fatal to the life of the spacewarp as puncture is in the flank of a toy balloon.

Base One's flight came swirling in and caught the orders from the Guardian director in charge. Base Seven was used up; every available ship for the job was holding the warp, it was Base One's job to enter the warp and

close down on the generator room, to fasten tractors to the free-running ship and slow it down below the speed of light before the warp broke.

As many as could latched onto the ship and applied their drives. The ship slowed and the warp-holding ships slowed with it, keeping their distance.

It was tricky business, for there was just enough lack of spacial homogeneity to make the course a bit rough; it was somewhat like the job of running a fleet of vessels close together in a heavy sea.

Then the rest of Base One's power ships came in to stand between Seven's warp-holding craft, and Base One's warp-planes went forth, entered the hull of the ship, and established a second englobed warp around the ruined generator. A third warp was thrown about the ship just outside of the second, and the whole crew took a deep breath.

Now if one broke, the other would be there.

They were safe; the ship was saved, could be repaired and put in service again.

The tractors slowed the ship and eventually the whole fleet dropped below the velocity of light and their spacewarp generators thrummed down to a growling halt. The galaxy changed in color as the ships entered prime space and the light of the stars was the real light that mankind had always seen instead of the unreal glow caused by the central energies of the suns of the universe. For space itself is warped naturally in the core of a sun, and the energy glows through a sub-space populated only by the phantom cores of prime space stars—and the few puny bits of sentient brain that warped space artificially.

Technicians breached the ship with their kits of tools to make repair as the Guardians broke up their pattern and began the trip back to their bases.

Steve felt gratified; it was the first generator saved by the Guardian tactics. And it was worth anything, any cost, any sacrifice to realize that man-

kind had some control even over mankind's failures.

He followed the flight back to Base, found a magazine, and relaxed.

●
STEVE WAS awakened from a light sleep by the ringing of the telephone. Blinking and wondering, he answered it; Lois Morehouse said: "Steve, you're wanted here."

"Okay, what's up?"

"The usual."

Steve hung up and pulled himself together. Why they'd want his opinion again he could not understand. It was obvious this time that the Guardians had done a fine job; nothing was lost. All he could think of was the fact that he had gone as an observer and had seen the incident without taking active part in it. That might possibly give the committee a less distorted picture than the recount of a man whose attention was filled with the mechanics of operating against the possible eruption.

He was preparing his account as he entered Morehouse's office, but once inside, he saw instantly that here was no committee investigation.

Morehouse and Charlemagne were there. Lois was there. And an air of trouble was there also.

Morehouse held up a hand. "Hagen, look at that."

Steve turned and looked. In the corner, near the galactic model, stood a rack and panel, obviously disconnected from the generator room of a spacecraft.

"Go take a good look at it."

Steve went. He looked.

"Test it!"

Steve turned. "I'll have to get my equip—"

Morehouse snorted. "Just turn it on and check it!"

Steve shrugged. He snapped the master switch and turned the function switch to *test*. He checked the meters, wondering whether they were standardized and reading correctly. But

he had no need to concern himself about such a refinement; the servo bridge that balanced the stress of warp against the pressure of normal space and integrated it so that the total volume of warped space remained essentially constant was obviously haywire. Instead of operating with a steady thrust of power—operating on test by balancing the power from a standard electric cell against a standard resistance load—the servo bridge was oscillating.

On, off, on, off, on, off, on—

Rapidly like the swinging of the pendulum of a very tiny wall clock, on, off, on, off, on, off, on—

No meters were necessary to check this failure; it was as obviously bad as a flat tire.

Steve turned the gear off and faced Morehouse. He waited, for it was so obvious that he needed to make no explanation. Morehouse wanted something—

"Hagen, that was in the ship we just saved."

"That way?" asked Steve incredulously.

"That way."

"That should have been planeted."

"We agree."

"It's criminal."

"We also agree. So," said Morehouse pointedly, "why didn't you clap a restraint on 'em?"

"Why didn't I what—?"

"You inspected that ship about three hours before it took off."

Steve shook his head. "I'd never have passed it."

"You did. Here's your seal."

Morehouse showed Steve the sheet of paper giving the *Astarte* a clean bill of health from the Guardian Patrol.

"Hagen, what kind of a game are you playing?"

"Game?"

"Hagen—or Wrightwood?"

Steve looked at Lois. Morehouse said: "She hasn't told us anything that we did not know, Wrightwood."

"Look," said Steve angrily, "my name's Hagen."

"How long have you had it?" asked Morehouse.

"All my life. I answer to it."

"We know that. Lois called at you half way across the campus and you turned; a man taking an assumed name doesn't always react to an unexpected use of it."

"Look," said Steve, as angrily as before, "I've never tried to conceal the fact; all I've tried to do is ignore it. So I'm William Wrightwood Junior, according to a few dozen people who do not believe their eyes or cannot read. To my friends and to the rest of the world, I am Steve Hagen, which is the name my father and mother gave me long before I was born." Steve's eyes grew soft for a moment and he smiled in a reminiscent fashion. "I've been told that my name would have been Catherine if I'd been constructed differently."

"All right, what's your game?"

"Game—schmame. What do you mean?"

"Hagen, why are you here and what do you hope to accomplish?"

"I'm here because I want to be a Guardian."

"And how is William Wrightwood fitted into this picture?"

STEVE SAT down suddenly. "Look, Commissioner Morehouse, if you think for one moment that I am among the Guardians so that I can cast some discredit upon them so that William Wrightwood can take over, you're much mistaken. Wrightwood can roast in hell for all of me."

Steve turned and looked at Lois. "Do you believe me? Are you on my side—or have you been playing Mata Hari with my feelings?"

Lois flushed. "I believe him, dad."

"Thanks," said Steve drily. "Now about the Mata Hari side of it?"

"Steve, forgive me; I had to know."

"So now you know," he said bitterly. "And so do I."

Charlemagne shrugged. "Steve does a fine enough job," he said. It came ungrudgingly.

"No doubt," said Morehouse. "And somehow I doubt that Wrightwood could plan all these years to plant his son in such a manner. To make—"

"Wrightwood has made pawns of everybody he could control," snapped Steve; "but I'll run my own life."

"We're not running the Guardians as a method of personal revenge, either," Morehouse said.

"What do you mean?"

"None of us can quite justify the idea that you are planted here for sabotage. We did bring you to Base One so that we could keep an eye on you, Hagen."

"Then what—?"

"But granting there is no intention of sabotaging the Guardians, there is still a fine opportunity of seeing to it that William Wrightwood gets clipped."

"Meaning?"

"Meaning the possible overlooking of a generator so bad that the ship would explode, losing for Wrightwood a good bit. Kill off a ship a month by not working too hard, by looking the other way when the generator is about to cave in, by slowing down operations—"

"Look, I—"

Morehouse stood up. "Maybe it isn't even conscious," he said slowly. "Just a subconscious act, blinding the eyes so that a ship is sent forth to explode."

"What am I? An accident prone?"

"Maybe where Wrightwood is concerned," suggested Morehouse.

"Lord knows I have no love for William Wrightwood," said Steve soberly, "and I want to strike back at him. But no man knows better than I do that the way to clip Wrightwood is to wrest some of his power from him or to go ahead and do that which he deemed impossible."

"He is right," said Lois.

Morehouse swivelled around and

looked at her. "Lois, are you in love with him?"

"I might be. Eventually I may be. Now, I don't know him well enough. But—"

"You're talking in a circle."

"—but I will say this: I will be a very happy woman if Steve Hagen turns out to be a right guy."

Morehouse looked at her silently; Steve took a deep breath; Charlemagne stared at the ceiling. In the silence the computer behind the alarm screen clicked code; none of them had to turn to look at the galactic sector. They knew it was a distant base responding to a distant alarm, two or three hundred light years across the galaxy.

MOREHOUSE eyed Steve, then. "Hagen, we can't take chances on you."

"I'm being tossed out on a premise?"

"Why don't you resign?"

"Why split hairs?" asked Steve.

"A matter of prestige. You have always had an excellent record. Had you shown any blots, you'd have been cashiered during training school. You graduated high in the class and therefore—according to the laws—we had to accept you. Mostly," said Morehouse sharply and hitting his fist in the palm of his other hand, "because we knew that any reason we give for releasing you must be air tight. Wrightwood owns too many news agencies, congressmen, and top-drawer statesmen. He'll eye anything we do and if he can, he'll yell favoritism, revenge, or rank incompetence."

"And if I resign?"

"That will be your prerogative."

"Also an admission to Wrightwood that he was right?"

"That's your problem."

"I decline."

"We can force your hand, Hagen."

"How?"

"You forget that," said Morehouse,

turning and pointing at the faulty warp generator.

"But—"

"It is hard to believe that a Guardian, even a raw recruit, could miss such an obvious fault; it is even more difficult to think that such an oversight was made in malice and revenge."

"I—"

"Then how did it happen?" demanded Morehouse.

"I don't know."

"And you won't resign?"

"No."

"Then until you find out how this warp generator got past your inspection, you'll be released from duty," said Morehouse. "You have no status, Hagen. You will wear the uniform in courtesy only, since you are a member of the organization, and you are subject to our rules. Your pay will continue, since we have no recourse, and your stated duty will be one of investigation on one subject only: Ascertaining the base for this near-explosion!"

"But—"

"That's the edict," said Morehouse.

"Lois—?"

"What can I say?"

"You—?"

"Steve, I think a lot of you. More than I have thought of or considered any other man. And until hatred came out, you were it. Hatred is a nasty thing, Steve; it is not a good thing to found a love or a life upon. So until you rise above your hatred, it's no go. Lose it or burn it or beat it—and then come back."

Hagen turned and left the office. He felt beaten. Where was he to start?



HOURS LATER in his quarters, Steve was still pondering the same question. There

were so many angles to follow. Steve did not like to think that maybe Morehouse was right, that, subconsciously, he had overlooked the faulty generator hoping that Wrightwood would lose by the accident. He certainly had not overlooked the generator with malice. On the other hand there were other factors that could be plausible. Wrightwood wanted to control Steve; might not Wrightwood's own men have fouled the generator, knowing that Steve had checked it only hours before? The fact that the Guardians got there in time to save the whole ship indicated that someone was on his toes. Any shadow of suspicion cast upon Steve would work toward Wrightwood's ends.

Nor were the Guardians beyond suspicion. Wanting to bring this thing into the open, what better way than to louse the generator themselves and let the natural course of events take care of Hagen.

It was not a pretty tangle. Every angle remained closed to him; Steve could not open the first door, for he had not the authority to question anybody.

But until he got the answer, Steve was not going to do what he wanted to do.

The days wore on into a week, and then the week grew into a month. Steve, unattached, roved the galactic sector, nosing in generator rooms of spacecraft hoping to pick up some clue.

He had to give up the idea of substitution. The generator delivered to Morehouse's office was the generator that had been taken from the threatened ship; it was the same generator he had checked a few hours before the ship took off.

After two months Steve was ready to admit defeat. Only determination remained, and that was wearing very thin. No longer did he have the regard of his fellows; his unattached

state was practically a condition of disgrace and everybody knew it. He saw little of Lois; alone he saw her not at all.

But as the months passed, the trail became colder and colder, and the incident dropped into the files—was covered up by the regular list of calls that sent the Guardians out from time to time to take care of trouble, occasionally to fight a blowup, often to go out and calm down some stormy condition that possibly would not have blown anyway. The muttering of the alarm came constantly from one or the other sector of the galaxy and the Guardians would be out, from one base or another.

But not for Steve; he was licked.

He sat in his quarters quietly unhappy for hours before he pulled the typewriter from its case and placed it deliberately on the top of his desk. With a shake of his head, Steve put a sheet of paper in the typewriter and began to tap out his resignation.

He was licked. Morehouse had given orders that he intended to keep. Hagen was to locate the reason why the *Astarte* had a faulty generator. Period. Or else.

This was time for the "or else" part of it. The thought passed Hagen's mind that not even an official investigation could uncover the truth at this late date. He had no chance where every man's hand was against him. And so—

THE TELEPHONE interrupted his train of thought, and he got up to answer it. "Hagen?"

Steve said it was and then tried to identify the voice. It was a hoarse voice, half a coarse whisper and half an underone which sounded like someone trying to disguise his voice—successfully.

"Hagen, d'y'e want some dope on the *Astarte*?"

"Who are you?"

"I'm a friend. Look Hagen, if you want some dope on the *Astarte* come to Sanaron."

"What's on Sanaron?"

"The dope you want."

"But—"

"Take off in half an hour and we'll be watching for you," said the voice. Then it hung up.

Hagen wondered. But even a fool's lead was better than nothing and Steve had followed less likely leads than this in the past three months. He left the typewriter as it was and went to the spacefield, where he climbed into the inspection craft and took off for Sanaron.

Sanaron was no long run for the fleet Guardian ship. Steve made it in jig time and as he dropped his ship on Sanaron's one spaceport, he saw a planet craft awaiting him. He was whisked across the face of Sanaron to a large city, deposited on the landing stage of a tall hotel building, and dropped a few stories to a luxurious suite.

And once again Hagen was face to face with William Wrightwood.

"What goes on?" demanded Steve.

"You want some information on the *Astarte*?"

"I do."

"You've been ordered to locate this information."

Hagen grunted. "Yes."

"Steve, did the fact that you are William Wrightwood Junior have anything to do with this order?"

"What difference does that make?"

Wrightwood sat back in his chair. "Steve, I hate to do this to you, but your answers have confirmed my suspicions. This order and its impossible fulfillment is more like an attempt to have you resign. This smacks of unfair tactic, and upon that fact I am making my final bid."

"What final bid?"

"Since the Guardians have proven themselves unable to operate as a completely impersonalized agency, they fail in the one thing they claim—

which is to operate for good or bad, for rich or poor alike. As such, I can prove the ability to operate the Guardians as a more efficient agency, and I shall do it!"

"Not if I can help it."

"Tell me, Steve, what can you do?"

"I can—"

"There was a faulty generator on the *Astarte*. How did it get there? Would you maliciously try to wreck my ship?"

"What do you think?"

"Of course you wouldn't, knowing that the lives of a hundred people were in the balance. Would I try to wreck my own ship to get you discredited?"

"Hardly, since you'd lose too much."

"Might the Guardians try?"

"No."

"But there are your three possibilities, Steve. One of them is it!"

"So—"

"So it must be your little friends, who knew they could set a fire, then put it out without harm to anybody but the man they want to be rid of."

"That's not my fault," snapped Steve.

"No," smiled Wrightwood, "it's all mine. Remember—I told you that no matter what you did it would ultimately work toward my success? Why don't you try aiding me instead of bucking me?"

Steve found himself answering slowly, instead of snapping out a reply. "Just what do you hope to gain from this?"

"I've gained it," smiled Wrightwood. "I've recordings of this entire meeting, and the tone of your voice during what you have to say is sufficient evidence to prove my point: that the Guardians have been wasting the taxpayers' money by ordering an impossible investigation by a valued man for the spite they hold against his father."

"I might have expected something

like this. You've got no news of the *Astarte*."

"Yes—I have. Play along with me until I control the Guardians and I'll see to it that your position is granted back to you. There's no need of investigating the *Astarte* anyway; and your Commissioner Morehouse is going to eat crow before he's finished."

"Bah!" growled Steve. Once more he turned and left his father's presence abruptly.

HE WAS whisked back to his waiting ship and he took off as fast as he could. It was no more than a fifty minute run across the star trails to Base One, and Steve was going to make it as fast as he could.

But ten minutes out of Sanaron, the alarm whispered and then broke into full clamor.

No danger alarm, this. This was the real thing!

Steve swapped his ship around in space and headed for the spacial coordinates given in the alarm. In his mind's eye he could see the men tumbling out of their quarters and into the waiting Guardian ships and hurtling into the black.

Steve found the stricken ship as the squadron came into detector range and deployed. It was a superliner, one of Interstellar's finest. And as Steve came up to the *Lunelight* the lifecraft broke the spacelocks and streaked out and away.

Once more the englobement of warping planes started; plate to plate they formed, jockeying to make their forward-flung planes of warp lie against one another, edge to edge so that the volume enclosed was contained without leak. Tractor ships hurtled up and latched onto the ship and started to bring it down in speed.

But this was not the time; one of the plane ships faltered and the edge of its warp plane broke contact with its neighbor. The spacewarp fractured, and then with the enigmatic peculiarity of a collapsing warp, the volume began

to drop back toward prime space from the center out. The warp generator itself, in the bowels of the ship, broke into prime space first.

Matter, at a thousand times the velocity of light, dropping into a space where matter cannot exceed the velocity of light!

Where the tiniest speck of matter will have infinite mass when the speck reaches the velocity of light.

Where the time-field of the mass becomes zero as the velocity of light is reached.

It was like a stellar nova.

A searing intensity of energy trailed out behind the ship and left a streak a million miles long in a matter of microseconds. The ship itself collapsed over the trail of energy, and the whole exploded finally in a hundred-billion mile long course leaving the trailer of raw, unbound energy spread out for the span of a solar system.

Then the trailer itself exploded, blowing streamers of torrential energy deep into space. Bits and shags of the blazing stuff flew away, great gouts, shapeless and viciously scintillating, roared along the ship's course.

The tractors fled; the plane ships had been hurled back, away, and now were lost in the sky—far behind. They hurried to catch up, for they could hurl their planes of spacial warp against a flaming mass of raw energy and bat it aside like a ping-pong paddle slaps the ball aside. The swamper circled in and the cone projectors fenced with the darting spears of flaming power.

It was Steve that remembered Sanaron. "Charlemagne!" he roared into his mike.

"Who's calling?"

"Hagen. Remember Sanaron."

"Sanaron?"

"Ten minutes back at full drive lies Sanaron!"

"God!"

And then, for the first time in the history of space, in the history of the

Guardians, came the dreaded Black Alarm.

SANARON was a complete stellar system, eight habitable planets well inhabited by every possible form of sentient life. The star, Sanaron, was a nondescript G-zero that would not have had even a number in the Ter-ran catalogs before the conquest of space, but Sanaron was a full-grown star in the flush of its energetic cycle. Once the raving centroid of raw energy erupted from the *Lunalight* fell into the gravitational field of Sanaron it would drop into the star. And then mankind would see, a supernova in operation—for a brief instant before this system cremated itself.

The Black Alarm!

Across the galaxy it went. Guardians from every base in Sector One alerted and took off within a matter of minutes. Guardians from joining sectors moved into Sector One, spreading out through the sector to keep the sector protected; Guardians from outlying sectors moved in, again spreading out. Thinned but active, the Guardians released useful personnel to go out and fight the Black Alarm.

"Charlemagne!"

"Now what?"

"Can I help?"

"Yes," came the cryptic reply; "stay out of our way."

Steve snarled, but he got no reply.

A gout of energy flashed past his viewport, blinding him. Then he realized that he was unprotected, and only a nuisance here.

But—

"Go along with him," said William Wrightwood. Aid him, and—

Steve laughed bitterly; swapped ends, and flashed along the line toward Sanaron.

He dropped down upon Wrightwood's hotel and dashed along the corridor. He shouldered his way into the suite with a yell that brought servants and hotel detectives running. It also brought William Wrightwood from

his bed, clad in a pair of pale blue silk pajamas.

Somehow it seemed appropriate to flee a holocaust in a pair of passionate pajamas, and for the first time in years Steve saw a bit of humor in his father's mien.

"Black Alarm," he said breathlessly. He shoved Wrightwood back into the bedroom and shut the door on the incoming help.

"Can't save 'em all," said Steve, working his false-fear act for all it was worth. "Slip out with me and we'll es—"

"Good boy, I knew you had what it took."

Wrightwood started to look for clothing.

"No time," snapped Steve. "*Luna-light* blew up ten minutes spacedrive out of Sanaron. The Guardians have the Black Alarm runn' but the magma will get here first. That's raving death from an exploding sun for a billion people living on eight planets. Come on."

Wrightwood looked out of a window frantically. Everything seemed so solid, so safe. Yet—

He turned and nodded at Steve.

WITH A SLY grin Wrightwood could not see, Steve led the older man out into the chill of night and relished the shiver as the cold bit in through the silk pajamas and struck at the man. Then they were into the Guardian craft and into space.

"Where—?"

Steve shrugged. "Want to see it?" he asked.

Horried, Wrightwood nodded.

Eight minutes later they were approaching the scene. Spread out on a shapeless form ten million miles across, tongues and streamers of raw energy flared forward, flaying space before it as it came. At a hundred and seventy thousand miles per second it came toward Sanaron, so near to the velocity of light that the roaring particles of energy had enormous mass.

No need for the great searchlights here, for the coverage of the explosion was so great that there was no need to filter the blackness away.

Instead, Guardians played before the oncoming death and fought it.

With a quiet disregard for death, Steve ran his little ship to within a mile of the raving storm front and matched its velocity.

White-faced and awed, William Wrightwood watched the horror without really knowing how close he was to death. It was too big to be personal, that flaming front. He saw the circling ships fighting first this tongue and then that, saw the planers fencing the streamers in, holding them while coners sucked away the raving energies and spread them too far apart to be tangible. He saw the swampers soar in to chill a raving island of exploding space, and watched with heaving stomach one of the Guardians get touched by a lance of flame—saw it go searing into death to recreate an island of raw fire of itself.

Then the mad attack against the roaring furnace cleared; Wrightwood began to see that there was a pattern to this.

Methodically the Guardians were isolating the forward-reaching tongues of energy from the main mass; cutting them off, and swamping them. From behind, as Steve circled the scene, planers and swampers were closing in on the trailing flame, chopping it off bit by bit and chilling it out of existence.

Sanaron was no longer a star lost in the stellar field. It was a flaming disc that could be seen, but to look at it hurt the eyes. Steve knew; Sanaron was not too far away.

He hurled his ship to the front again.

And then, as though it were a wave hitting a breakwater, the coruscating front dashed against the massed warp-planes of a whole squadron of Guardians, braced, planted, ready and waiting. The planes buckled and the squad-

ron was forced back but the raving front flattened against the planes and was washed aside; turned back, spread to curl around the edges like tongues of doom reaching for the prey that lurked behind the wall. The squadron retreated, forming its shape as it went, until firm pressor rays behind the outflung planes felt for and caught the core of Sanaron's outermost planet.

With planetary mass behind, the squadron held a parabolic shield in space, ploughing a hole in the racing field of exploding energy.

FIRE AND flame enveloped the planet, passed around it, held from it by the warp planes of the Guardians. A ship crumpled and died; its place was refilled by a spare. Another ship ran out of power abruptly and it was replaced until it could drop into the planet and recharge.

Then, as abruptly as the passing of an ocean wave, the roaring furnace in space was passed. The swamper and coners that fought the rear guard of the flaming death appeared in the tortured sky, scurrying around to wipe out the isolated trailers that the passage of the holocaust had left behind.

Another squadron came out of the blackness, a group from a distant sector that plunged past the planet and hit the flame from the rear. Steve circled the field of horror again and Wrightwood, his face pressed against the viewplate, watched the arrival of three more squadrons that hit Sanaron, formed a plate-to-plate shield while fighting for position, and established their protection for the next planet with a matter of seconds to spare.

One streamer leaked through a crevasse in the hastily-made shield, and the inside of the paraboloid was filled with swamper that fought the flame right to the atmosphere of the planet before it died.

And as the sun itself came under attack, the bulk of the racing squadrons came circling in from distant sectors. Men and sentient beings coming

prepared to fight a supernova, to stand in there while a sun explodes, fighting space to hold a tenuous barrier in place to save the fragments of humanity that lived on the eight planets of Sanaron.

But Sanaron the Sun had mass, and the flaming particles of the erupting space had mass but were discrete.

There was a turning in the flame, a coalescence that centered, radially inward, upon the sun that waited for it and attracted it. With stellar mass behind, the flung planes of warped space held well, but the mass of energy, as its volume was, and the gouts and streamers of raw flaming space flattened against the plates and curled along them, creeping around and around. And around and around.

"Hold 'em," cried Steve.

Wrightwood turned anxiously. "What are they trying to do?"

Steve smiled wearily. "We're going to establish a complete globe around Sanaron and hold that raving horror out of the stellar mass."

"But—"

"The rest—on the outside—will fight it."

"And if they fail?"

Steve's expression told him.

"But Steve—there's ten thousand ships trapped inside of that sphere of raving energy."

"Yup."

"And they'll—they'll—?"

"They'll? You mean we'll. Yes. We'll die. But we're not going to die; the Guardians never die..."

The sphere of roaring energy closed down on the last avenue of escape. Outside was sheer hell. Below them was the stellar furnace cal' l Sanaron, giver of life and death. Above them was a completed sphere of raw hell trying to drop down and add its raw mass-energy to Sanaron.

Somewhere outside raced and circled the rest of the Guardians, swamping the fires of exploding space and trimming down the depth of the energy bit by bit.

But doggedly they held, and an hour passed before there came a shout over the radio, a shout barely heard through the overwhelming roar of cosmic static. The sphere had thinned!

From that moment on it was certain. Once mankind got the upper hand over his foe, aided and augmented by beings from far across the galaxy devoted to the same program, the horror-fires were due to die swiftly. The flaming skies opened, spread, became isolated bits of intolerable light, and then winked out as sheer mass of numbers hit them from all sides with swamping volumes and rayed cones. Planers swept bits together into a larger flame and called for swamper to come and chill it.

"Then, once more plate to plate, the planers formed into a mighty single plane and swept space like a cosmic dragnet, forcing the danger out into deep space where there was no danger.

Then came the final signal; the Black Alarm was finished.

WILLIAM Wrightwood, Senior, faced Commissioner Morehouse openly. "But so many—?" he faltered. Wrightwood was wearing his foster son's clothing and it looked a bit incongruous to see the jaunty uniform on the elderly Wrightwood.

Morehouse shrugged. "The reptilian culture from Sector Eight is as helpful as the cockeyed gang of catmen from Nine."

"But—"

"Of course they're not reptiles nor cats. None of them have ever been

within a hundred light years of Terra. But they're sentient, brilliantly so. They love their own music and their own literature and their own art, none of which means anything to any other culture, really. But we have a common ground to base the Galactic Civilization upon—someday. We all have the fear of destruction and the willingness to fight against it. To help our neighbor fight it, even though he sees colors we cannot, and can hear sounds we cannot hear."

"My mighty little empire looks a bit small—"

"Indeed."

"Morehouse, it strikes me that you're up a tree."

"I am?"

"You've got a fine man here trapped in a lousy job. I'll bet a hat I can get farther along than either you or he can about finding the truth about the *Astarte*." Wrightwood smiled. "Then you can take him off that job."

"Maybe," smiled Morehouse. "But remember that I'm giving the orders. I can also rescind them—providing they need rescinding."

"Well?"

"Do they need rescinding?" asked Morehouse. "Does Steve still hate you?"

"No man can really hate another man that he's just succeeded over," said Wrightwood. "Watch!" Wrightwood turned and called: "Hey! Steve!"

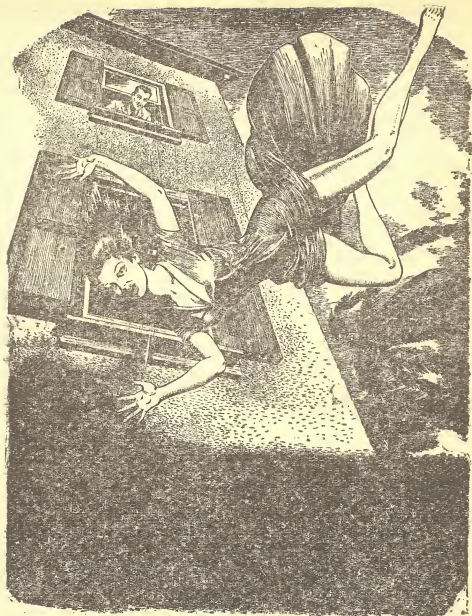
Steve Hagen turned away from Lois Morehouse. "Yes, dad?" he replied.

He came across the office holding her hand.

"Life" magazine claims that science-fiction writers show little sense of humor.

We deny this, and if you don't believe that our writers can laugh at themselves, now and then, read, "A SECONDARY FIRST" by Gene L. Henderson in the November issue of our sister magazine

FUTURE combined with Science Fiction Stories



Jonathan watched in horror as the girl fell...

“**R**UM PORT to come home to, if I may say so, sir.” The captain spat over the rail into the blue waters.

“Rum?” Jonathan Robertson, 7th, continued to study the cliffs which he had not seen for twenty years. “Why?”

“Oh, I dunno. Gives me the jumps every time I touch here. Maybe it’s the name—New Patmos.”

“Yes, Saint John did have a rough

time when he was exiled on the original Isle of Patmos, didn’t he?”

“And then there’s that gang on the dock...”

“It’s just Old Tom and some of my father’s workmen.”

“I know.” The captain relit his pipe. “But any other Caribbean port I stop at, the dock workers are singing and skylarking. Those fellows never say a word. Rum, I call it! Some of

The Belt

By Wallace West

No one foresaw what would come of the social experiment Jonathan Robertson started early in the 18th Century, on this little island. And Jonathan the 7th found the terrible fruit of what had been sown...

my crew think they're jumbies... won't set foot on shore here."

"Jumbies are one thing I can assure you they're not, captain," Jonathan chuckled. "They're just plain workmen—and English to boot. As for the Old Tom, he carried me on his shoulders when I was a kid."

"Cheerio, Tom," he continued after the lines had been made fast and the ebony-colored ancient was clambering over the rail. "Where's father?"

"I'm sorry, sir." The answer came in the clipped British accent of the West Indies. "Your father is dead, sir, these two weeks."

"Dead!" A picture of the sixth Jonathan Robertson, austere in his white linens, flashed through Jonathan's mind. It seemed impossible that he was no longer striding on his daily rounds to the factory and mine.

"Yes sir. Perhaps we'd better go up to the house at once, sir, if you don't mind. I'll tell the men to follow with the cargo." Tom turned to the leaden-faced, overall-clad trio on the pier and shouted; "Men! Take cargo to storehouse. Bill! Ye ken?"

"Yah!" grunted the man on the left.

"Fred! Ye ken? Cargo to storehouse?"

"Yah!" The tone was identical.

"Dick! Ye ken?"

"Yah!"

Tom picked up Jonathan's bags and led the way up a rocky path which eventually rounded a cliff which had hidden the Robertson mansion.

It was a pleasant enough place although sadly in need of paint. A grove of palm trees half-concealed the ravages which time had made on its tall pillars. The house had an atmosphere

Scientific theories are never "true" or "false"; they are "good" or "bad" in various degrees, and the criterion is one of usefulness—predictability and manipulation to (seeming) advantage. Theories are often discarded, simply because evidence may be insufficient for one, where it seems to sustain another—or where another can account for observed phenomena more simply. Take Lamarck's theories on the effect of environment on heredity: so far, the evidence seems to put this in the "bad" classification. But if certain experiments could be made...

of peace and quiet, but the effect was spoiled by an ugly factory which clung to the cliffside on the other side of the valley. Although it was Sunday, Jonathan noticed that smoke was belching from the factory chimney.

"I know it's ungodly, this working on the Sabbath, sir," said Tom as his new master stared. "but They will work all the time. Even during the funeral..." He broke off and hobbled forward to swing the door of the mansion open.

Everything was orderly inside. Latitudes were drawn to keep out the equatorial sun; teakwood floors gleamed; dozens of canaries twittered in their cages near the windows.

"This way, sir."

Jonathan climbed a winding staircase which seemed smaller than he remembered it and was ushered into the master bedroom. This was a cool, high-ceilinged chamber with many long windows looking out across the valley toward the crouching factory.

"Your father wished you to stay here, sir. He said it would give you the feel of the place. On the desk there you'll find the letter he was writing to you just before he died."

"Thank you, Tom. That will be all for the present."

JONATHAN picked up the envelope and ripped it open.

My beloved son: The words were penned in a Spencerian script which wavered ever so slightly.

I should have told you years ago all the things which you will find written here but I was afraid—afraid you would never return to take up the task which is now slipping through my fingers.

You were too young when you left here to understand the strangeness of this place. Suffice to say it killed your mother and is now killing me. It has a curse—placed on our line by Sir Jonathan Robertson. Now it is time for you to face that curse.

To start at the beginning: Sir Jonathan purchased this island from the

Crown in 1709. He had discovered a vein of Lapis Lazuli here which was to make him and his descendants immensely wealthy. God pity them all.

The stone had to be worked just after it was taken from the mine and before it hardened by contact with the air, so Sir Jonathan conceived the idea of a colony and a factory right on the island.

He had served Queen Anne well, both as warrior and explorer, so he petitioned to purchase convicts from English prisons to work the mine and factory for him. That was a legitimate practice in those times. He received a shipment of some 200 prisoners of both sexes—ranging from debtors to murderers—and set them to work under an iron-fisted supervisor named Jock MacPherson.

At first MacPherson and the criminals fought each other bitterly. But the supervisor gave them better food than most had received in their lives, kept them working hard under heavy guard from dawn to dusk and did not hesitate to crop the ears and even the noses of incipient rebels. Within a few years they were behaving quite well...

Glancing up as he turned a page, Jonathan found that old Tom was standing behind him, reading over his shoulder.

"I said that would be all," he repeated firmly.

"Yes sir." The man hobbled out of the room, closing the door softly behind him.

Sir Jonathan seems to have been one of the first men to discover the meaning of efficiency and the value of division of labor; I have often read the journal in which he described the manner in which he made the prisoners work. Each man had a certain amount of labor of a special kind to perform. That is, one would blast the ore; another would bring it to the surface. A third would split the stone into workable pieces. A fourth would chip it into rough shape, and so on. Each did his own job...and nothing else

Thus each man and woman had a very definite and very circumscribed set of duties to perform each and every day. After twelve or fourteen hours of this, you can imagine that they had little time or energy to think of revolt; instead, they went to their mews and slept like animals.

Late in life, Sir Jonathan had a son whom he sent to Paris to be educated—since he had amassed a considerable fortune by this time. In France, Jonathan, 2nd, made the acquaintance of young Jean Baptiste Pierre Antoine de Monet de Larmarck and became fired with the latter's still-nebulous ideas about the effect of environment upon heredity.

The second Jonathan rushed back to New Patmos and started experimenting along lines suggested by Lamarck's theories. He set about arranging the marriages of his workers and managing practically every moment of their daily lives. Again there was some trouble, but the aging Jock MacPherson put it down; the details are bloody but they do not matter at this late date.

Sir Jonathan's grandson was able to dispense with guards. By this time the descendants of the original prisoners had lost all initiative. They plodded through their deadly, unvarying tasks and mated as they were told like the automations they were fast becoming...

JONATHAN laid down the letter and stared out at the clanking factory. So this was why? Even as a child he had felt the oppression of this place and had danced with joy on leaving it. The haggard, half-remembered face of his mother floated for a moment before his eyes. No wonder she had seemed always sad.

I was the first Robertson to rebel; I had been educated in England. On my way home I stopped at Jamaica, fell in love with your mother, and, without realizing the hell I was bringing her to, married her. Tom came with us to New Patmos.

I considered myself something of a radical in those days. When I learned of conditions here, I demanded that my father free our laborers. The old man—he died a few months later—merely shrugged and declared they were free. "Their unending toil and in breeding have made machines of them," he said. "They are helpless now. You must care for them, my son; you can never leave the island again lest they starve."

God help me, I tried my best to make men and women of them again. You will see what success I had. Try in your turn if you must. It will be useless, but the effort will permit you to sleep. The centuries have dug a rut too deep for the creatures to climb out of. They have become like my canaries, poor....

The letter ended as if the hand of death had snatched pen from paper.

For a long while Jonathan stared at the pages. The singing of the canaries—their cages occupied every corner of the bedroom—finally roused him.

"Tom!"

"Yes sir." The old man had been waiting outside the door.

"Turn all these damned birds loose."

"But you'll need them to test the air in the mine, sir; the gas gets bad at times."

"Turn them loose, I said. At once!"

"Yes sir." Quietly the Negro went about the room, opening cage doors. Jonathan followed his progress with growing horror. The birds, so long accustomed to captivity, refused freedom. A few came to the opened wickets, then retreated to their perches with frightened twitters.

"Yes sir. Anything else, sir?"

"Go down to the pier and tell Captain Parker to hold the steamer; we're sailing with him."

"But you can't do that, sir. You can't leave your people to starve." The whites of Tom's eyes glistened. "You have to send out shipments of stones and the ultramarine dye which is

made at the factory; you have to distribute the food which comes in."

"Nonsense. I'll pay them off and arrange for a boat to pick them up if they want to leave the island. They'll get along..."

"You'd better see your people first." The servant pointed toward the cowering birds. "You don't understand."

"All right, then, we'll visit the factory. Come on."

Morosely he strode along the weed-grown path across the valley. Midway they passed the little cemetery where six generations of Robertsons lay side by side.

"I had to bury him myself, sir." Tom indicated a fresh mound of earth. "They couldn't help...couldn't perform a task they were not accustomed to."

IN CONTRAST with the neglect apparent on the rest of the island, the factory, despite its age and ugliness, hummed with life. As they approached they heard the clink of hammers and the endless flapping of belts. When his eyes became accustomed to the dimness inside, Jonathan saw long lines of men and women bent over ancient work benches, operating the lathes and forges of another age. They were doing all manner of complicated tasks in complete silence and with perfect concentration.

Not a worker glanced up as he entered. The tempo of toil continued without a break.

"Are they always like this, Tom?" The heir of all the Robertsons felt his hair prickle. "Don't they ever talk?"

"Always like this, sir. When the gong rings they have their lunch. The next time it sounds they march back to the barracks behind the factory. In the morning it calls them to work at daybreak."

"But what do they do when not working?"

"Eat. Sleep. Breed."

"And the children?"

"They work, too, as soon as they can walk. It is the law. They have obeyed it during eight or more generations, for their lives are short; it's too late to change them now."

Stopping before a time-blackened bench, Jonathan picked up a piece of blue stone upon which a gaunt, stoop-shouldered young man was working.

The effect was instant and frightful. With a snarl like a dog from which one has snatched a bone, the laborer grabbed the jewel from the intruder's hand. Then, as he again began working upon it, his face resumed its previous vacant stare.

"You see, sir?" Tom said. "It's the same way in the mine. They've lost most human characteristics. Notice that one's fingers...long and slender for delicate work. And this one's...so tough that he can reach right into his forge."

"Have they lost the power of speech?"

"Oh, no, sir. They talk when speech is necessary in carrying on their work. Just a few words, though—like parrots, I would say."

Oppressed by the horror of this silent, noisy place, they hurried along until they came to a better-lighted section of the building. There a number of women were engaged in etching delicate designs on almost-finished stones.

Dressed in black nun-like robes, they crouched over their work while their fingers flew. Most of them were ugly and toothless, with dirty hair and shoulders permanently rounded. A few retained some semblance of good looks and made pitiful attempts at adornment. One had a drooping flower in her unkempt locks; another wore an ancient ring. Those little things sent a thrill through the newcomer. Perhaps...

GLANCING away from this group of harpies, Jonathan drew in his breath sharply. On a platform near a

broken window sat a girl who was looking at him with a faint show of interest in her great, sad eyes. Her chestnut hair was held back with a strip of cloth. Her robe was clean. Her face reminded him of a Watteau shepherdess.

"Who is she?" he whispered.

"The women's overseer, sir; she talks a bit."

"Good morning," Jonathan addressed the girl hesitantly. "I'm the new master. Do you like to work here? Have you any complaints?" He stopped, feeling foolish, as he realized that, although she still was looking at him, her fragile fingers had not ceased their endless task of sorting little blue stones.

"Good morning, new master," she answered in a voice faint from disuse. "I do like to work here. I have no com-com..." She stumbled over the unfamiliar word.

"What is your name?"

"Jo."

"Jo what?"

"Jo." He detected a look of fright in her blue eyes.

"Would you like to leave this place?"

"No!" With a gasp Jo dropped her eyes and sorted with increased speed. Jonathan thought of the fluttering canaries.

"Would you like a holiday, Jo?"

She did not answer. Her face was white and her breath jerked.

"Better leave her alone, sir," said Tom; "you're getting her all upset. Come, I'll show you the mine."

Heartsick, he left the squat building through a tunnel which led into the cliff. Tom switched on a flashlight. By the aid of its beam they scrambled down a long incline. The air was thick and fetid; walls dripped with icy moisture.

"What's that?" A shuffling sound nearby had startled him.

"One of the miners, sir. They don't need lights any more; they seem to feel or smell the vein of Lapis. Look."

He swung the beam to disclose a

naked horror which was scrabbling at the end of the tunnel with a crowbar. The creature snarled through a matted beard and hid its eyes.

"The miners only come out after dark," said Tom. "They've almost lost the power of sight... Look out—here comes an ore car." He dragged his master aside as a loaded car trundled out of the depths and skittered by them on rickety wheels, pushed by another monster.

"Good Lord," panted Jonathan. "Get me out of here before I go mad. This air..."

"The pumps aren't adequate, sir. Your father was going to install new ones, but the miners don't seem bothered by the foulness. The air may become highly explosive. That's why we keep the canaries. But since the miners have stopped using lights..." He plodded toward the surface while his master walked close beside him as the one remaining link to the world of reality.

Back in the factory workroom at last, Jonathan mounted a bench and shouted for attention. The belt flapped idly on; work continued. Most of the laborers lifted their eyes to stare at him dully.

"I am the new master," he yelled above the din. "I do not want you to work on Sunday. Turn off the power; go home. Come back tomorrow. This is the day of rest."

The belt flapped on. Most of them gaped at him without comprehension. In a far corner, however, an ancient and twisted man rose from his bench and started fumbling at his leather apron. After half a minute another followed his example.

"No!" Another voice, harsh and sharp as a steel file, cut through the uproar. "Work! Work! Is the Law! God say: 'By the sweat of brow!' Work! Ye ken?" It was the cadaverous individual with the snarl who was speaking. "Ye ken?"

"We ken!" The answer came in chorus, like a ragged thunderclap. The old man refastened his apron and sat

down again, as did his companion. The belt flapped.

"Now look here!" Jonathan was furious. "I said..."

"It's no use, sir." Tom was plucking at his sleeve. "You might as well talk to the Lapis, now; come."

AT THE MANSION, Jonathan sat for hours with his head between his hands, trying to think of some way to lift the curse riveted on New Patmos. He waved away the luncheon which Tom brought, then, as the old man started to leave the room, called him back. "Who's in charge at the factory?" he asked.

"There's nobody rightly in charge, sir; things just run themselves."

"Who is that creature with the voice like a squeaky hinge, then?"

"Oh, that's Jock, the men's supervisor, sir. He only..."

"Jock!" Jonathan caught his breath. "Could that be Jock MacPherson, 7th, a descendant of Sir Jonathan's original overseer?"

"I wouldn't rightly know, sir. But you had better watch him; I think he is jealous."

"Jealous? Why, for heaven's sake?"

"Because you spoke to his girl Jo, sir. Under the law they will mate soon to produce another generation of supervisors."

"You're a doddering old fool!" Jonathan's face was pink.

"Yes, sir; anything else, sir?" Tom turned stiffly toward the door.

"I'm sorry, Tom. Forget it. I've got the jumps trying to figure out a way to shut down that factory. Can you suggest anything?"

"You might try locking the doors tonight, as soon as everybody is out. But..."

"Splendid idea; that might break the chain. We'll try it."

In the brief dusk after sunset they slipped across the valley and padlocked the sagging doors of the plant. Then, as they turned to retrace their

steps, Jonathan grasped the old man's arm.

"I've been thinking," he said softly. "Perhaps I'm going at this thing backwards. Maybe I ought to try to win Jock over first. Do you know where he lives?"

"I...I think so, sir. Only..."

"Lead the way, then."

In silence they skirted the factory and reached the mews which nestled under the cliffs like swallow's nests. The narrow alleys were unpaved and unlighted. Already the workers were asleep—or hiding perhaps? Jonathan wondered—in their warren of tumble-down shacks. In no time Tom became hopelessly lost in the maze. Once they asked directions of an old crone hunched on a mouldering doorstep... and were answered with a gale of crazy laughter. All the while they felt hundreds of eyes watching their progress...mocking at them.

"I'm sorry, sir," Tom shivered at last after several minutes of hammering on a door which he thought might be the right one had brought no response. "It's no use; we'll have to come back in daylight..."

"...when Jock will be at the factory. Perhaps I can talk to him there, though. Let's get out of this."

JONATHAN rose from his tumbled bed before sunup and set himself to watch the factory through a pair of field glasses. Despite the fact that the gong had not sounded as usual, workers already were streaming toward the plant.

The first to reach the locked doors halted uncertainly but did not turn away. They merely stood there like a herd of cattle. The scene reminded Jonathan unpleasantly of pictures of mill lockouts he had seen in newspapers.

As he watched with bated breath, a surging movement began to grow in the crowd. Good Lord! They were pushing at the heavy doors. The iron-

bound panels sagged. A splintering crash sounded across the valley. The doors were down! The silent mob started moving across the threshold. Again his effort to break the spell had failed.

"I told you, sir." Tom had entered the room unheard and was standing at his elbow like a venerable Satan. "Might as well make the best of it. Why don't you go back to England, marry a nice girl and bring her back here..." He dodged with amazing nimbleness as his master 'lashed out with a long arm. "I beg your pardon, sir. No offense meant; no offense at all."

"Very well. But stop calling me 'sir.' And get these damned canary cages out of here before I smash them."

"Yes, Mister Johnny." Tom moved about the room collecting the birds. "Don't take things so hard; you'll only become ill."

For several days Jonathan wandered about the island, avoiding the sight of the factory. But the place fascinated him and at last drew him back to its mildewed corridors. He might have been only a shadow so far as most of the workers were concerned. Jock remembered him, however, snarling softly and crouching more closely over his work when his master passed by. And the girl by the window even smiled faintly upon catching sight of him.

On one of his trips Jonathan found Jo outside the factory during lunch hours. "Would you take a walk with me?" he asked on the spur of the moment.

"Walk? Yes. Not far. Gong," she answered shyly.

He tried to take her arm but she flinched away. Nevertheless, when he turned away she wandered down the path beside him.

Using simple, childish words, he tried to get her interested in the flowers, trees and birds along the way and

fancied that he was arousing her dormant mind. At any rate, she did not notice that they had left the factory far behind until the recall gong sounded.

Instantly she whirled and started running back down the path. In vain he pleaded with her not to hurry; that it didn't matter if she were late. She ran on without a word, as he had sometimes seen school-children run when they were tardy—her face puckered as though to cry; her breath short and rapid.

At the factory door he caught and tried to hold her. She beat her fists against his breast and sobbed in a wild burst of hysteria. At last she twisted herself free and rushed to her bench. There, almost magically, her face resumed its sweet serenity as she began her accustomed task.

Yet, as he returned home, defeated once more, Jonathan was certain that he had partially awakened her. And he also realized that, as Tom had hinted, he was falling under the spell of this strange, twisted being. She was almost an automaton, but not quite. No, she was more like a person obsessed by the craving for a narcotic. He clenched his fists and swore to save her, or to kill her in the attempt.

A WEEK later, when he believed the effect of Jo's fright had worn off, Jonathan posted himself outside the mews and waited for the morning gong. He told himself that he was looking for Jock but his heart leaped when he saw the girl approaching before the harsh echoes of the "first bell" had died away. He noticed with delight that she was taking more care of her appearance than before. A white flower shone in her hair, which was newly washed and neatly combed. Her bare feet peeped from beneath the hem of a fresh robe.

"Good morning, Jo," he smiled at her. "Would you like to see my house? It's not far; you have time."

For a long moment she looked at him dubiously. Then her curiosity overcame her fear. "Ye-es. Jo will go. Must be back when second gong rings."

"Come then. We must hurry." This time she let him hold her arm. "I found some new flowers in the valley this morning," he continued softly.

"Flowers?" She glanced at him under fringed lashes.

"Yes... Like the one you wear in your hair. What is it called?"

"It called... It called..." She shook her head at last. "Jo... forget."

"And this tree, all covered with blossoms. What is its name?"

"Jo think it called mim...mimo... mimosa?"

"Right. Well, here's the house. Come right in."

"Oh no. Law say..."

"The devil with the law. It's my house; come in."

After repeated urgings she crept through the big door. Her work completely forgotten for once, she marvelled at the lacy curtains, the waxed floors which made walking so difficult and the paintings on the walls.

While she was testing the softness of the big bed upstairs with open-mouthed astonishment, Jonathan slipped out of the room and locked the door.

Tom, his white head bobbing with worry, was watching him from the landing. "I wouldn't have done it, Mister Johnny," he muttered. "It would be better for you to get a girl in England or the States..."

"Damn you, shut your mouth," his master exploded. "There's no danger; she can't get out. This may jolt her out of her rut. Then she can help the others."

He was interrupted by the snarling clangor of the second gong, followed by a wild hammering on the upstairs door.

"You'd better let her out," Tom's head was shaking worse than before. "I know! Your father..."

A terrified scream cut him short.

Jonathan went up the stairs three at a time. Tearing open the door, he plunged inside, then halted, stunned. The room was empty!

But not quite! Jo's strained white hands were clinging to the window sill.

"Wait! Jo!" he shouted. "Hold on. I'm coming!"

Instead of waiting, she relaxed her hold. He reached the window to see her crash into the iron porch railing twenty feet below.

"She's dead, Tom." He looked up from Jo's still face a few minutes later. "Fractured her skull." His voice was matter-of-fact, but there was death in his heart. Now that it was too late, he realized that he had loved her. "Poor child. I treated her very badly, you know."

"I told you so, Mister Johnny. You can't do anything. They live in darkness." Suddenly losing his English stoicism, Tom dropped to his knees, threw his arms around his master's knees and sobbed: "Oh, Mister Johnny. I'm afraid!"

"There, there, Tom." Although his heart was breaking, it warmed to this display of humanness in the old man. "We'll lick this thing yet. Tell you what... Tonight we'll go to the factory, barricade the doors and windows... keep the fools out until they come to their senses."

"It won't be any use." Tom rose slowly, his fat old face drawn in stern lines. "Nevertheless, we'll fight it out together, if you wish."

"Very well, Tom." Jonathan stretched out his hand and grasped that of the other over the body of the dead girl. "Together it is, then."

THAT NIGHT, after they had said a simple prayer over Jo's grave, they hurried to the plant, repaired the doors and spent long hours barricading them and the windows from within. Often they felt eyes upon them, but no one interfered with their work. Dawn was breaking by the time they finished.

The morning gong soon was followed

by scuffling sounds of the gathering crowd outside. Like a pack of hounds, the workers sniffed around the building, trying to find an entrance. When this was unsuccessful, there was a long silence. Then, when the pair inside had begun to take hope, they heard the crash of some heavy weapon against the doors.

"They're thinking a bit, anyway," said Jonathan; "they've hit on the idea of using a log for a battering ram."

The hammering gathered force and rhythm, and began to be accompanied by a grunting chant which sounded oddly familiar.

"They're remembering something else." Tom held his jaw to stop his chattering teeth. "I haven't heard them sing for a score of years."

"What is it they're chanting?"

"It's Luther's hymn, *A Mighty Fortress, Mister Johnny*."

"Rather appropriate, what? We'd better get some more work benches against those doors. They're sagging."

As the unintelligible hymn reached its climax the doors caved inward despite Jonathan's best efforts. The benches were pushed aside. The mob poured in.

It might have ended there, with the creatures going quietly to work, except for the fact that the whole place was in disorder. For a moment the workers milled sullenly about, looking for their accustomed tools. Then Jock spotted the two intruders.

"He!" shouted the man-monster, pointing wildly and shaking his matted hair. "He kill Jo. He shut doors. He laugh at law."

The ragged men and women shifted their bare feet uncertainly. For a few seconds Jock seemed at a loss, groping for words. Then a look of cunning overspread his hideous face.

"He shut doors again," yelled the mad overseer. "He burn down plant. We no can work. Kill him. Kill! Kill!"

This time Jock got the response he had been seeking. The workers—more

than 500 of them—surged forward, snarling deep in their throats.

Jonathan took a step toward the mob but Tom pulled him back. "Wait, Mister Johnny. They know me. If anybody can check them, I can."

The old man clambered onto one of the few upright benches and shouted for silence. For a moment he got it. Then Jock hurled a chisel. The blade slashed Tom's cheek. At the sight of blood the crowd went wild and charged.

Before Jonathan could make a move to save him, Tom was dragged from the bench. A scream rang out. A black arm reached upward. Then there was only a sound such as pigs make at a trough.

Life, which before had seemed so bitter and worthless, became suddenly sweet to Jonathan. The factory had turned into a howling madhouse, but behind him was the entrance to the mine! He leaped through it and sprinted down the black tunnel.

WHEN HE recovered from his hysteria, Jonathan found himself hopelessly lost in a maze of parallels. Controlling his nerves by sheer will power, he crouched in the pitch darkness and waited. Would they forget him? The blood-lust he had seen on those half-animal faces did not reassure him.

He listened...and could hear nothing but the blood drumming in his ears. Now that it was too late, he realized that he had gone about the whole thing clumsily...in the outmoded swashbuckling, Empire building fashion. He had tried to do, in a few weeks, a job which required years...decades...perhaps a lifetime. He should have started by winning Jock's confidence...or, if that couldn't be done, he should have killed the monster outright. Without Jock's influence the others might well return to sanity in a short time.

Might what? He shook his head to clear his wandering thoughts. The heavy, gaseous air was choking him.

His mouth had become dry and gluey. Red spots danced before his eyes.

What was that? He leaped to his feet, remembering that the miners needed light. A pebble, dislodged by his movement, rattled down the wall with a sound like thunder. Then he laughed shakily. The sound he had heard was the far distant flapping of the factory belt. They had turned on the machinery.

A long time later he thought he heard another sound. Nearer this time! He pressed his knuckles against his lips to keep from screaming. He turned to run. But where? The sound had come again. On the other side now, it seemed.

He picked up a piece of rock and hurled it with all his force.

Nothing! Or was that the echo of a maniac laugh.

"Get away, you hairy devil," he yelled. "I have a gun here."

No answer. Yet the blackness was peopled with horrors. Was he going crazy? He mustn't give 'way. Britishers have been in more ticklish spots than his and come out on top; England expects every man to... to pull himself together in an emergency. There must be some way out of this maze.

"Tom," he whispered, "hand me your flashlight."

"Sorry, Mister Johnny," the answer came; "it was broken when they killed me."

"Oh, that's right. I forgot you were dead, Tom. Can you help me out of this mess?"

"Sorry, Mister Johnny. But dying isn't so bad though, honestly—"

"England expects... England expects..." Jonathan Robertson 7th was fighting hard to retain *his* sanity.

There came a chuckling sound... not ten feet away now.

Light! Light! His shaking hands sought his pockets. Ah! Matches!

"Mind the gas, Mister Johnny." Good old Tom... A shame he's dead.

"I'll have to chance it!" His voice was quite calm now.

The match scratched against the sandpaper.

"The devil! It didn't light. Steady now... (Keep your paws off me just a moment longer, you scum)... One... Two... Three!"

This time the flame caught, flickered, was reflected for a split second in the eyes of a gaunt, stoop-shouldered young man at the other side of the tunnel, then burst into the searing glory of a thousand suns....

WE SHALL COME BACK

(Continued From Page 27)

WHEN THEY were gone, Leviathan swung ponderously in the water, contemplating the showers of stars which the Destroyers still rained down into this gulf where the last humans had vanished.

The stars stung upon the gigantic brow out of which the "Thoughts of the Deep" had risen and beaten for such infinite aeons. Before mankind, there was the whale. Patiently, through eternity, until now, Leviathan had bided his time. Conquerors rose and fell upon the continents, but three-quarters of the world is water, and the whale could wait.

Now at last the conflict moved

downward, into Leviathan's own world.

More of the Destroyers came into range, sinking slowly, testing a little upon the currents of "Thought" that rolled up undisturbed through the dark water. The lethal showers rained down which had made every native thing upon Earth and under the waters of Earth cower and die when the stars touched them.

Leviathan wrinkled his majestic brow and shook the stars off.

Then the Earth-Born turned slowly and powerfully in the water of his native deeps—turned and faced the Alien.

AS I WAS SAYING...

ACCORDING to the right honorable H. L. Gold, who presides over the destiny of *Galaxy*, not only is the day of the pulp magazine past, but the pulps are actually museum-pieces, ready to be exhibited next to the illuminated manuscripts. Now, I certainly do not wish to dispute so noted an authority on the subject, but Life can become confusing when one hears such revelations, then sees quite a number of pulp magazines surviving, and some more or less thriving, around one. However, be that as it may, it's something of a pleasure to be editing a relic, and I hope you readers cherish these mementos of a brighter day that keep on appearing month after month.

EARLY returns on the ballot in our August issue show a definite trend of opinion in favor of retaining the letter department, but opinion on whether the editor should be restrained seems to be split down the middle. Just about half of those of you who bothered to vote said, "yes, keep editorial comments brief," while the other half said, "take as much space as you like". Part of the reason for my extended comments has been in hopes of encouraging discussion. There have been some science-fiction readers' departments wherein the editor refused to comment on letters, explaining that he didn't want the last word, and didn't want to squelch the readers by the weight of his authority. At the time, I objected to this myself—absence of editorial comments, that is—and felt that the editor's opinions added something. And it was also my feeling at the time that damn few, if any, of the readers would be squelched by anything the editor had to say. This opinion has been strengthened by my own experience. By and large, science-fiction readers do not seem to be overawed by that supposedly godlike thing called *The Editor*. Aforementioned personage can pronounce his lordly pronouncements, and the readers continue to think what they please and argue back. Which is as it should be, for my money.

The Prophecy department of this magazine seems to be about as good as the general forecasts of election returns. Since this page is being made up some weeks ahead, I cannot be sure, yet, whether Milt Lesser's "Wild Talents, Inc." will actually be on our contents page, this time, nor do I know, right now, whether you'll see Walter Kublius' fine novelet, originally announced for *Future* under the title of "The Black Ant". The cover stories are definite; praise anything, we manage to get them in.



John Van Praag, eminent author, phrenologist, and tree surgeon says: "For the best of the Past, read **FUTURE!**"

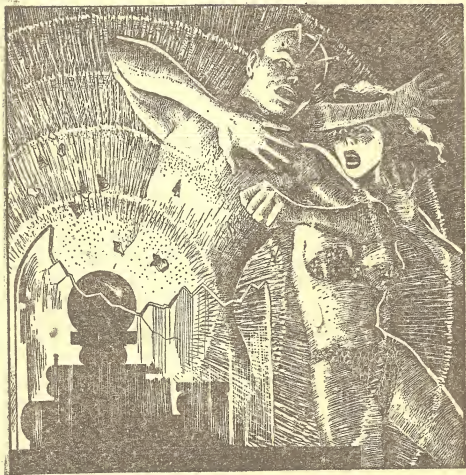
But everything else is uncertain until the proofs come back from the printer, and the magazine is laid out. Sometimes a story will be crowded out early, sometimes late—but we can never be sure until the very last minute. But, in any event, we do have these two stories, and you'll see them sooner or later.

But you can see why I'm reluctant, at this particular moment, to go into details about the next issue of *Science Fiction Quarterly*.

"This revolt is hopeless, Ker-jon, because it only strikes at the symptoms of unrest, without touching the roots. You may succeed—you may unseat those now in authority. But whoever moves in will only perpetuate the tyranny against which you revolted—renew the same oppression, under different slogans."

FUGUE

A NOVELET
OF THE FUTURE
By Stephen Marlowe



Most people actually know a good deal more than they may be aware of at any given moment. And perhaps one of the functions of dreams is to remind us of what we know, but will not let ourselves know on a conscious level . . .

The Space Ark left its home planet, Urth, two thousand years ago Canopus IV time, arriving here in the Canopus System some

five hundred years later. That is all we know for certain; the rest is mere conjecture.

Two salient features of the Space Ark's unique social institutions stand out above the myth and fairytale of our ancestors, however. The first is the fabled story of the Mutant-makers, and when one studies the conditions surrounding this phenomenon, the fabled story becomes cold scientific fact. On a giant balanced-terrarium of a ship which was largely automatic, seemingly isolated forever in the vastnesses of interstellar space, our ancestors lacked even a modicum of external challenge. They thus had to create their own artificial stimuli or face an inevitable retreat down the ladder of decadence to barbarism. It appears that for a time they went too far: they created mutants. These in turn gave rise to a rigid caste-system on the Ark, a system which afforded an extreme in internal challenges and responses.

The second salient feature of the Space Ark's social institutions was its favoring of the biolo-mental sciences over the chemi-physical sciences. This, again, proves to be an inevitable by-product of the Space Ark's static environment. No physical world existed: physics became a useless dogma, a meaningless jumble of terms which bore no semantic relation to the world-at-large. On the other hand, the Space Ark was a universe of introversion. The biolo-mental sciences leaped ahead of what had developed into a something-less-than-static-civilization. This, as we have seen, gave rise to the Mutant-makers. But on a constructive level, it fostered the growth of a new science of psychology, vastly superior to the old Urth science; and, some suspect, considerably more refined than our own mental

sciences. A particular manifestation of this lost science was the ability to project tri-dimensional images of dreams, to record them while the conscious mind slumbered, to play them back later and to interpret them unerringly....

—Andoos-Rob't, A Short History of the Abortive Social Institutions of the Urth-Canopus Space-Ark, Introduction.

KER-JON awoke suddenly, sitting bolt-upright in bed. It was cool—night-period temperatures always were—but fine droplets of perspiration dotted Ker-jon's forehead and dark sweat-stains discolored the armpits of his sleeping robe.

Over and over, one thought twisted through his mind; he was not a mutant; he was one-hundred percent normal *homo sapiens* and a bio-technician on the hydroponics staff at that. Yet—why did he always dream the same dream of a big hairless Ker-jon, his bald, shining dome topped with the three ridges of flesh which had manifested themselves in a series of mutations during the generation of his birth? Why did that dream always follow the same path...

He chuckled in spite of himself. The psych-technicians might yield the answer this time. He removed the electrodes from his temples, snapped the recorder off, rewound the dream-tape. Yes, he'd let the psycho-techs play with it in the morning, despite Cluny-ann's warning.

When the morning gong sounded, Ker-jon crept softly from his room. His way would lead past the quarters of the female bio-technicians, and he hoped to avoid a meeting with Cluny-ann. But the slim, fair-haired maid knew of his appointment with the psych-tech, and she had other ideas. Ker-jon barely got past the portal to the female quarters when its door slid into the wall with a faintly audible hiss. Arms akimbo, Cluny-ann

stood there facing him, the crown of her head hardly reaching his chin.

"Good morning, Ker-jon," she greeted him coolly.

"Please, I'm busy."

"I only wanted to see you for a moment, Ker-jon; just a moment, that's all. Will you take breakfast with me?"

"No. I said I have an appointment."

"You're always rushing around like the enzymes we feed into the 'ponic-vats. I'm sure your appointment will keep. I'm also sure it is unwise, this appointment."

Ker-jon prayed silently that she wouldn't part her lips invitingly for a kiss, because then indeed he might decide to forego his appointment with the psych-tech. Apparently, that did not enter Cluny-ann's mind. She merely walked out into the corridor, hands still on hips, blocking his path.

"Tomorrow we try to smash the Mutant-makers," she told him. "But today you must carry your dream with you and have it interpreted. Won't it keep? If something lurks in that dream which holds the key to our plans—*poof!* No more plans. Stay, Ker-jon."

Gently but firmly, he pushed her out of the way, smiled for a moment when she struggled futilely against the muscles of his good right arm. He said, as he went on down the corridor, "We can take lunch together. I'll feel more like eating after this nightmare is explained, anyway."

THE PSYCH-TECH, Ab'nath-Jawg, wore an immaculate white smock over his scrawny frame, a pair of spectacles over his big, watery eyes. Ker-jon saw no reason for the white smock; perhaps tradition said all psych-techs were to wear white smocks, and that was that.

"Ker-jon," Ab'nath mumbled, looking at his records, "bio-tech first class, non-mutant, no mutations in the family line. Right?"



Ker-jon nodded.

"Your request for a visit says you've been having a dream which has recurred frequently. An unpleasant dream?"

"Ummmm, no; not in itself. But I think—"

"That somehow its implications are unpleasant for you—is that it? Yes? I see. May I have the tape, please?"

Wordless, Ker-jon handed him the little spool, waited while the psych-tech snapped it into place in a small projecting machine. After that, Ab'nath flicked a switch, and the lights in the little room dimmed.

In the center of the room stood a large transparent cube, as long in each of its three dimensions as a tall man. Within it now, lights pulsed, flashed, coalesced. Then they settled back, playing only at the corners, waiting.

Ker-jon held his breath. A tri-dimensional, full color replica of his dream filled the cube.

There was Ker-jon, but a hairless, three-ridged-mutant Ker-jon, and there in the crook of his left arm a slim blonde girl who could have been Cluny-ann, except that she too bore the marks of a mutant—different strain this time, with delicate silver scales covering parts of her fair body. Under a large bell-jar in the foreground, a compact black machine hummed shrilly, a light above its squat main body flashing on and off, on and off.

The queerest part of the dream

was its background. Great concentric circles of color closed in on the bell-jar, broad bands of green, blue, red, orange, yellow. When first he'd had the dream, Ker-jon thought the circles emanated from the bell-jar, but clearly, this was not so. Rather, the bands of color surrounded it, almost as if they somehow attempted to crush it.

The dream Ker-jon did not think they could. He balled his right fist and struck down once, savagely, at the glass. It broke, but the machine hummed on and on. Ker-jon shrank back in horror, with a feeling of helplessness.

And that was all. Back to the cube came its flashing lights.

Ab'nath Jawg scratched his balding head. "A very odd dream," he admitted. "Do you know the girl?"

"She is Cluny-ann, my betrothed."

"A mutant?" demanded the psych-tech.

"No. But then, neither am I."

"Yet you both look like mutants in the dream. Interesting."

Ker-jon frowned. "I didn't come here to show you something interesting; I came to have the dream explained. Last night was the sixth time. The same pattern, no change."

"Relax, my friend. These things take time. Strange, we don't understand the radio with which we communicate between sections of our Ark, but histories will tell you that both radio and dream-machine function on the same principle. I don't understand radio; I can only guess, but the dream-machine I know. The recorder is stimulated by electro-magnetic waves from the cerebrus when you dream. The projector takes these vibrations and reproduces the dream itself. A to B, back to A again. Simple."

Ker-jon shook his head wearily. "I didn't come for that, either. I know the theory—"

"Patience! Will you have patience? I will submit the record to a staff meeting of psych-techs this afternoon, and we'll have an interpretation ready for you tomorrow."

"Tomorrow! Tomorrow might be too late."

"That's ridiculous, Ker-jon. Even if the dream manifests itself again tonight, so what? Tomorrow is soon enough."

Ker-jon shook his head sadly, took his leave. He couldn't tell the psych-tech that tomorrow might be too late because by then his fellow-conspirators would be floundering in rebellion. It all depended on him, of course: he had access to the master controls in the 'ponics room. Few people did, and certainly no mutants. Ker-jon, then; but Ker-jon had a dream which bothered him, which awakened him, sweating and afraid, in the middle of the night...

NIGHT-PERIOD. Dull blue lights casting eerie shadows in a little-used back room of the library. And six men who wove their plans for a *coup-d'Ark* when morning came.

Ker-jon sat on the floor with Cluny-ann, squatting near the dusty stacks which held the un-used physical science books. Not a volume here had been disturbed for perhaps a score of years—perhaps more. Why study the physical sciences when there was no real physical world with which to correlate your findings? Why study them when your universe was bounded with walls of glistening beryl-steel?

Cluny-ann sat near Ker-jon, but she kept her back to him, angrily. She'd hardly spoken a word since he returned from the psych-tech's office, and lunch had been a sorry social failure.

Now Flam-harol got up, paced back and forth for a time, the dome of his three-ridged head gleaming under the blue lights. He licked his lips, fingered for a moment the central flesh-ridge atop his skull. Then he spoke in his deep, booming voice. "I can't help

it if I'm nervous; we mutants have waited long and long for this—"

A chorus of "ayes" seconded that, and Flam-harol went on. "We can afford no mistakes. We do or we die—tomorrow. One slip—just one—could be fatal. But in the end, if all goes well, we'll smash the Mutant-making machinery, we'll smash the rule of the Mutant-maker. I don't have to tell you what that means. Whither we came from, that doesn't matter. A world called Urth, but I cannot picture Urth—a huge world a hundred times or more larger than the Ark, a world where you live on the outside, not on the inside.

"I cannot picture it, and so I won't try. But this I can picture. A hundred years ago, they started making mutants, to satisfy a warped craving for superiority. Half the people on the Ark now are mutants. Ridge-head, scaled, toe-less—what's the difference? Mutants all, living in the worst quarters, relegated to inferior positions, scorned, ridiculed...

"Tomorrow, we end it; by evening, no more. Equality on the Ark, yes, but that's not of primary importance. We will destroy the machinery which can make mutants. No fresh variants will arise, and that is more important. Now, your plans."

Another ridge-head stood up. "At ten hours, twelve minutes, my men take the astro-room."

A chunky mutant with scales covering his chest: "We converge, along with Flam-harol's squad, on the armory. Also at ten hours, twelve minutes."

Second scaled mutant: "The Mutant-maker's quarters. We take the reins of government at ten hours, thirty five minutes."

Lithely, Cluny-ann got to her feet. "The Chamber of Change, at ten hours, forty minutes. I lead my women there, and it is hoped that with so much confusion elsewhere, we'll be able to destroy the machinery. But—"

"But what?" Flam-harol said. "We

appreciate the aid of you non-mutants. Yet if you have any doubts—"

"It's not that," Cluny-ann told him. "I don't think our revolution will be enough; that's all."

"What more is there?"

"I don't know! If I knew, that would be different. I suspect that the whole thing may start over again before we know it."

Flam-harol shook his head. "I don't understand."

"Well, something like this. We're seeking to destroy effects, not causes. Whatever the causes are, we should root them out first."

"The Mutant-maker and his government are the cause."

"No. I mean deeper than that. I mean—oh, I don't know! But something hovers in the background; I can feel it. A cause, a deepseated cause apart from any mutant-non-mutant bickering..."

Ker-jon stood up, smiling. "Don't mind her," he said. "Cluny-ann isn't happy unless she can worry, I think. Now, my job is this: at ten hours I lock myself in control in the 'ponics room, and if necessary, we can hold that as a sword over any ornery heads. I'll be ready to cut off the air-supply to any section of the Ark that needs such treatment, Flam-harol."

The big ridge-head nodded. "That appears to be it, then. Till tomorrow, when I hope to meet you all again at noon..."

2

KER-JON FELT very refreshed when he awoke. The dream had failed to appear; consequently, he slept well. He wondered idly if the psych-tech, Ab'nath, had decided anything yet. Actually, Ker-jon now regarded his visit to the psych-tech's office as a little on the impulsive side. He knew how the technicians worked, should thus have expected at least a twenty-four hour de-

lay. Still, just depositing the spool with the psych-tech had relieved him considerably, and surely no harm could come of it.

He showered, shaved, glanced at the wall-chronometer. Nine. One to go—

So—in just three hours—it all would be over. By then they'd have gained control of the ship, or their martyred corpses would start on their eternal flight through space. If a third alternative presented itself, Ker-jon failed to consider it.



He heaped his plate with succulent synthetics in the crowded dining room, then decided he didn't feel much like eating. Once he caught a glimpse of Cluny-ann, but she sat far across the room, in earnest conversation with three tall strong women who probably were her squad leaders.

Nine forty-five...

Ker-jon crossed to the cashier's window, gave the woman mutant a six-credit slip, pocketed his change, left the dining room. He knew of no other way to kill time. He'd waited at the cashier's window, picking at his teeth, striking up meaningless conversation with the woman. Not accustomed to talk with a non-mutant, she'd been awkward. Now he still had fifteen minutes, and the way he felt, it would seem like hours.

He strode rapidly down the corridor, past the door to the astroroom. Nothing there, not yet. Too early.

He reached the ramp which led to 'ponics. Two men lolled there, insolently. Green-uniformed men—police. Why?

Ker-jon's palms were clammy when he reached them, but he tried to walk between them indifferently. They

came together, barring his way. They didn't say a word.

"I'm on duty in 'ponics in ten minutes," Ker-jon told them.

"That's interesting," one said.

"Are you looking for anyone in particular?"

"Yes."

"Well, will you let me through?"

"That depends."

"On what?"

"On whether you're the guy we're looking for or not."

"Nine minutes," Ker-jon said; "it's important that I'm on time."

"Have you got a name, friend?"

"Bio-tech first class Ker-jon, hydroponics division."

"Ker-jon, eh? Come with us."

One policeman eased a needle-gun from his belt, the other wrapped a big hand around Ker-jon's elbow. "Come on."

"What did I do?"

"Don't ask me. This is just a job, but I'm sure they'll let you know." The man was snickering.

Ker-jon pulled his arm free. "Well, you tell me where to report; I'll go later."

"You promise?" said the man with the gun, smiling rapidly.

"Yes."

"That's good! He promises. Come on now!"

Ker-jon grunted, relaxed. The man's gun-hand wavered, only for a moment, but it was enough. Ker-jon swung his right fist up and felt his knuckles bruise against the man's jaw. Without waiting to see the effects, he darted for the 'ponics door and inserted his key.

Something crashed against his legs, behind the knees, and he stumbled against the door, striking his head sharply. When he came away he found himself reeling dizzily on hands and knees. The man who had tackled him scrambled off the floor first, waited while Ker-jon clambered half-way up. A heavy boot exploded against his face, then seemed to explode all over again inside his skull. He fell

flat on his stomach, hands clawing at the floor feebly.



HE GOT UP groggily, felt the caked blood stiffening the skin of his face. His wrist-chronometer's dial marked off eleven hours and thirty minutes!

A withered old albino man peered at him anxiously, his face as white as the fungi which sometimes grow, if you are not careful, in the 'ponics room. His pink eyes blinked often against the strong day-period light. Ker-jon couldn't guess his age—eighty, perhaps.

"I see you're awake."

"Who the hell are you?"

"A counter-revolutionary, young man."

"What?"

"Don't be surprised; don't think your little revolution was such a closely-guarded secret that no-one knew about it. For one, the Mutant-maker knew. The revolution was an abortive failure, I am sorry to say."

Ker-jon looked at him dully. "What happened?"

"Nothing much. The Mutant-maker had his forces deployed all along the line. Flam-harol didn't have a chance. Twenty-four mutants were killed, and eighteen women. Another two-score injured."

"Cluny-ann?"

"Who? Oh yes, the leader of the women. She's all right, I think. But she said something about tearing you apart limb from limb if she found you. It seems you weren't where you should have been, and for that as much as anything else the revolution backfired. It seems you disappeared." The old man chuckled softly.

"The police took me. So many dead..."

"Police—no! Police uniforms, but counter-revolutionaries, I assure you. Thanks to psych-tech Ab'nath, we got to you in time. Probably, the revolution would have failed either way, but

more pointless carnage would have resulted."

"Damn you!" Ker-jon said bitterly. "You stand there yapping about what might or might not have happened. Forty days of planning went into that revolution, and all the dreams and hopes of so many mutants—"

The albino blinked. "Ah yes, forty days. Do you know how old I am, Ker-jon? I'm eighty-seven. I was one of the earlier mutants, and I've stood this thing a long time. I didn't want any scatterbrained scheme to knock the legs out from under a plan which is calculated to do more than you dream. How old are you, Ker-jon?"

"Twenty-four."

"Just a baby, and—"

"Go to hell," said Ker-jon, rising. "I'm going to find Cluny-ann. Maybe we can salvage something. Maybe—"

"Sit down, will you?" The two uniformed men came in, swaggering. One motioned Ker-jon back into a chair with his needle gun, and Ker-jon sat down. The other said: "I'm sorry we had to hit you. But you fought, and you didn't give us any choice."

Wearily, Ker-jon turned to the old man. "Just where do you fit in? Are you working for the Mutant-maker?"

"I said we are counter-revolutionaries. We stood opposed to your plans, because you favored the wrong fight, at the wrong time, with the wrong people. Simple?" He chuckled again, a very irritating sound. "No, I suppose not. Perhaps psych-tech Ab'nath can help explain. Will someone call him?"

THE LITTLE balding man with the watery eyes entered the room. "I'm here," he said. "Ah, I see you have Ker-jon," he smiled, handed a sheet of paper to the prisoner. "Here, you might be interested in this."

Ker-jon scanned it rapidly. Yesterday, yes, he'd have been interested. But not today—too much had happened since then.

*Subjects: Bio-technician first class
Ker-jon, hydroponics division.*

Dream: (An objective description of the recurrent dream.)

Conclusions: a) Both Ker-jon and his betrothed, Chny-ann, appear as mutants in the dream-sequence. Four votes for an unstable, neurotic personality; eleven for obvious feelings of sympathy with the mutants; one abstention. Alternative two is thus a logical certainty.

b) The bell-jar machinery is a meaningless bit of gadgetry which defies analysis. Sixteen votes for symbolic representation of the Mutant-making machinery, esoteric and unknown to all technicians save the bio-techs, mutant-making division. Conclusion a logical certainty.

c) Ker-jon destroys the bell-jar with brute force. Five votes for an unneurotic personality's desired destruction of a major social institution. Eleven for uneasiness and a rigid anxiety concerning the revolution, for subconscious doubts on Ker-jon's part that a frontal assault against the Mutant-maker will solve the Ark's problem. Alternative two a logical certainty.

d) The warped prismatic effect in the background is crucial. The red-orange-yellow-green-blue indigo-violet of the spectrum is replaced by green-blue-red-orange-yellow, with indigo and violet out of the sequence entirely. Three votes for mistaken knowledge concerning the "rainbow" of the ancients, and for no other significance; three votes for a representation of star-colors (note that indigo and violet, not visible in any stellar object seen through the astropport, are entirely lacking)—three votes for a representation of star-colors for the subject's desire to associate himself with the stars, hence with the void of space, hence with death; four abstentions; five for an immersed subconscious conviction that our knowledge of the "Rainbow" and hence of the physical sciences is lacking, and that this lack of knowledge may be crucial to the entire problem. No alternative a logical certainty, and

while the conclusion is indeterminate, the final alternative is preferred...

Comments: Faced with violent action which his subconscious mind refused to accept as a satisfactory answer, Ker-jon also was confronted by a recurrent dream fostered by that subconscious rejection. Ker-jon's subconscious recognized the pending revolution as (1) a displacement in the order of events, a striving to conquer effects rather than causes and to leave the whole solution indeterminate, and (2) an inadequate course of action directed in a frontal assault against the most obvious effect of the hinted-at ailments which afflict the Ark.

Solution: Not determined, because conclusion (d) remains inconclusive. (Once he understands his own problems, Ker-jon should be a great help to the counter-revolutionaries—Ab'nath.)

"You see," Ab'nath said, taking the slip of paper back from Ker-jon, "your subconscious mind couldn't accept the pending revolution. It felt something was lacking. In that sense, then, your dream was a flight from reality, a fugue. But it had a constructive aspect as well. It—"

"I know," Ker-jon scoffed. "Sure. You take one small, insignificant part of the dream, and because it ties in with your own theories, you blow it up out of all proportion."

The psych-tech shrugged. "Just how did you know the real order of the spectrum, anyway?"

"I didn't know that I knew it! When I was a child I read a book on the physical sciences, just to be contrary, I guess."

"Evidently, the knowledge remained in your subconscious, and—"

"So what? You have a vague notion about a deficiency, that's all. So you destroy a budding revolt which could have restored equality to the Ark..."

ALL THIS time, the old albino man had been listening silently. Now he said: "The revolution was doomed to failure, Ker-jon; don't you see

that? Even if it achieved its aim, what would have happened then? We live in a static environment, with no external challenges to keep our culture going. If you won, the mutants would have taken over; tyranny would have exchanged hands, that's all. I'm a mutant myself, but I say this: if you had succeeded, the mutants would have treated non-mutants, in time, in the same manner the non-mutants treat them. Merely a reversal of roles. Would you have wanted that?"

"No, but—"

"Wait; let me finish. We have a tremendous external challenge, only we fail to see it. What is the Ark, Ker-jon? An artificial world, a manufactured environment. A vessel taking us from someplace to someplace else. Do you know where we came from?"

"Urth—"

"Yes, but what is Urth? We don't know. It's in the old books, but no one reads them. And where are we going? Even I don't know that, and I have tried to find out. The books are not indexed, and it might take one man years to find out. Working together, a group of men could shorten that time to months.

"Further, what is the void of space outside? Mere blackness, or—I don't know. And the stars, the little pin-points of light we see, what about them? Are they worlds? Was Urth a star; do we now travel towards another one? Again, I don't know. But we can find out. There is our challenge, Ker-jon. There is the stimulus which can unite the Ark and put a permanent stop to internal squabbles. Are you blind to that?"

"I'm not blind to anything, old man! All I know is this: the revolutionaries are confined. Maybe they await death—thanks to you. I also know that more men and women each day are exposed forcibly in the Chamber of Change—which means that a new generation of mutants will be born. Any challenge on a purely abstract

level sounds awful silly, ridiculously unimportant, pedantically trivial... Umm-mm, never mind. You just don't understand."

"Wait," said the albino. "A compromise, Ker-jon. If you can rescue your fellows, what then?"

"You want an honest answer? I think I'd still hate you and what you stand for, a tired old man with old, meaningless ideas—"

"Can you rescue your friends alone?"

"I don't know; I can try."



"And wind up wherever they are, awaiting death with them?"

"I said I can try."

"Well, if you had help—let us say, if my two 'policemen' cooperated, you might pull the whole thing off by trickery; don't you think, with no bloodshed at all?"

"It's possible," Ker-jon admitted.

"A bargain. We'll help you, but then you must help us. Flam-harol is the revolutionary leader, but you carry almost as much weight with the revolutionaries as he does. Very well, if you rescue your people, if the Ark falls into your hands, will you then cooperate with us?"

"Why the hell didn't you offer that before the revolution? All this wouldn't have happened."

The albino smiled. "You'd have laughed at us, even as you're probably laughing to yourself now. But in this case we have something concrete to offer. Is it a bargain?"

"Sure," Ker-jon said wearily. "We need you now. It's a bargain."

3

THE RESCUE proved so incredibly simple that Ker-jon almost couldn't believe his senses.

With his two uniformed companions he made his way down the length of the Ark and deep within its bowels, almost to where the unknown engines which propelled them through space thundered and roared and pounded within their casings. Here in a deserted storeroom the prisoners were kept. And Ker-jon's uniformed companions walked right in, just like that, unquestioned by the guards who stood watch in the corridor.

The fight was brief. Unleashed, the prisoners swarmed all over their guards, killing them quite expertly, and quite ruthlessly. No time for an alarm, and the engines drowned all sounds of combat. Towards the end, Ker-jon had to turn away. What the mutants did to their captors wasn't pretty. But in a sense he couldn't blame them—what was the old expression about the shoe being on the other foot?

Flam-harol stormed out into the corridor, his face a bloody mask. But he smiled grimly. "This I like! No plans, no preparations—and they don't expect us! We'll have the Ark in half an hour..."

Behind him Cluny-ann stumbled out, one of her eyes blackened, her jaw swollen. She stopped short and stared foolishly when she saw Ker-jon. "Then—then you didn't desert us? Some even thought you'd betrayed us!

"And I once was betrothed to a beautiful girl," Ker-jon said, laughing. "You should see yourself now—"

She pecked at his lips with a brief kiss, came back for more, snuggling in close, but Flam-harol's voice roared at them. "The longer we stay here, the less chance we'll have. Are you two coming?"

In a wave, the prisoners surged

forward, pounding up the corridor. No order, no discipline—but Ker-jon knew they didn't need it. What they had was enough: superiority in numbers, surprise....

It seemed hardly a moment later, and they swarmed all over the door to the Mutant-maker's quarters. Oddly, it crossed Ker-jon's mind that they didn't even know the man's name. He ruled in anonymity, with his title, with the fear that a night-raid could bring, dragging a man and his wife to the Chamber of Change, assuring the next generation that they too would have their mutants, in ever increasing numbers, for sport, for ridicule.

Ker-jon never learned how the door was forced, but suddenly it stood ajar.

Through it streamed the mutants.

Ker-jon found himself in a wild melee. Needle-guns *zipped*; men fell. But always others surged forward, and the defenders' ranks thinned.

Ker-jon saw one of Flam-harol's lieutenants fall, mortally wounded. Three mutants took his place, and one of them had retrieved a needle-gun from a fallen guard. Other weapons appeared among the mutants, guns, knives, make-shift clubs. Nothing could stop them.

For himself, Ker-jon fought only half-heartedly. The swarm carried him forward against the defenders, but he struck out only when pressed. Strangely, he felt an odd detachment. He wasn't really a part of this carnage; no, he'd been swept into it, helplessly, and now he watched. It all seemed anti-climactic, pointless. Why? He asked himself that over and over again, turning once more to the battle when he found the answer. Did the meeting with the old albino mutant somehow hold the clue? Did it? Now *there* was a ridiculous notion!

THE WAVE after wave of mutants pushed forward, and Ker-jon hovered close to Cluny-ann, protecting, shielding, diverting any foe who

might single her out. She was a spit-fire, he knew, for all her small size—he'd seen her cut lose in the female gymnastic tournaments. But he could sense that she hung back, even as he did—unwilling to enter the fray. Had she once said something about this not being the final answer? He wondered how she'd have fared in a discussion with the old albino...

And then it was over. They pushed through a final portal, came upon a large apartment with strange, impossibly antique furniture. In a far corner cowered a little man, a little old man—smaller and more ancient than the albino. He cringed away from them, his limbs trembled. He babbled, "I surrender, I surrender, I—"

Flam-harol laughed once, then cut him down with a needle-gun. The end of the Mutant-maker, the man who controlled the destiny of all those within the Ark. Simple, no theatrics. Smile and cut him down with a needle-gun. Could that one gesture usher in a new era? Ker-jon did not know, but more and more the words of the albino returned, swirling through his brain. *Just a reversal of roles...*

Flam-harol sat down on the plushly upholstered chair. "Will some of you take your clubs to the Chamber of Change and smash it? I'm a little tired—"

A WEEK later. Flam-harol had taken the dead Mutant-maker's quarters for his own. Now he sat there with his lieutenants—two mutants, ridge-head variety, and Ker-jon—issuing directives.

"I've given it a lot of thought," he told them. "Sweeping changes must be made if we're to right a nasty situation."

They all agreed.

"First, the jobs of the highest skill will go to ridge-heads. Turnabout, eh, my friends? Henceforth, ridge-heads are bio-technicians."

Two of his lieutenants smiled,

nodded their satisfaction. Ker-jon said: "I don't know if that's wise. For one thing, you haven't had training along those lines; you're liable to botch—"

"That's fantastic. If the non-mutants could do it, we can, too. Shall we vote?"

They did. Three to one.

"You see," Flam-harol explained, "we deserve those jobs."

"Well, what about the current biotech's?"

"Oh, them. Why, they'll be menials, of course. Not discriminated against, not really; it's just that they've held their lofty positions too long."

"It wasn't their fault—" Ker-jon began.

Flam-harol waved a hand deprecatingly. "If you're worried about yourself and that girl—what's her name?—forget it. You'll be an exception. I figured on making you go-betweens, assuring peaceful relations between mutants and non-mutants."

"No, that wasn't it at all. I still don't like—"

"We have voted, have we not?"

"Y-yes."

"Very well. Next, scaled mutants shall be astro-techs."

"You can't do that!" Ker-jon cried. "A man doesn't necessarily fit a job because he happens to be one type of mutant or another. I'd suggest a series of tests, instead; let each man fill the job for which he is qualified."

"Unfair," Flam-harol said. "The non-mutants have had training; they'd win all the top positions. Shall we vote?"

Three to one.

"Albinos will be police and administrative workers. Finally—"

"Just a minute. Don't you realize that albinos have weak constitutions? You're relegating them to a position which they won't be able to fill."

Flam-harol smiled blandly. "If the police are weak, then the real power will remain in the hands of the biotechnicians. That will make for an era of peace and good-will, and it

will assure one thing: we'll never have a military government."

"I hope you're right about that peace and good-will," one of the ridge-heads said. "All week long, there's been rioting in the 'low-decks' area. Non-mutants on one side, mutants on the other."

"That will end," Flam-harol assured him. "I have confidence. Now, the job will be to get things going as quickly as possible. I want those directives carried out at once. The sooner we begin, the sooner we mutants will have a chance to live the way we should..."

This is what I fought for, Ker-jon thought. So one tyrant could take the place of another. Maybe Flam-harol doesn't know it; probably he'd be the last one to admit it. Nevertheless...

Aloud, Ker-jon said: "I resign."

"You what?"

"I resign. I quit. Run the Ark any way you like, Flam-harol. I want no part of it."

4

KER-JON said, "Hello."

The albino blinked rapidly.

"Ker-jon, is it not?"

"It looks like you have another recruit. That is, if you're still in business."

The albino chuckled. "We're in business, young man. As a matter of fact, we got an additional recruit the day before yesterday. You know her, I think."

Cluny-ann came in from the next room, looking very trim and pretty in her jumper. "It's about time you woke up," she said, but then Ker-jon took her hand and held it, and soon she forgot all about being contrary. She said, "Wi'son-gil says we're going to have a rough time of it."

"That's true," Wi'son-gil agreed, adjusting a pair of dark glasses over his pink eyes, then sighing with satisfaction. "It would have been sim-

pler had the revolution failed. Enough people hated the rule of the Mutant-maker before the revolution; probably, instilling the intellectual challenge of the physical sciences would have been enough. Now, unfortunately, it won't."

Ker-jon frowned. "I'm not sure I understand. What do you mean?"

"Flam-harol is developing a militant organization and a more rigid caste-system than we've ever had before; you know that. What we've got to do—what we've been trying to do all along—was to unite the mutants and the non-mutants with a real external challenge. A rebirth of the physical sciences and a subsequent conquest of them would have done it. But not now; now we'll need something more concrete.

"A serious threat, perhaps. What if the Ark stopped functioning, Ker-jon?"

"Stopped functioning?"

"Of course. We have day-lights. We have night-lights. We have hydroponic gardens supplying both air and food, which, except for a few minor adjustments that the bio-technicians can make, function perfectly in themselves. We have instruments of astro-gation, and the same thing applies. We don't even know where we're going!

"Damage all that. Damage everything which carries us along so smoothly, and what will happen? We'd either all join together to conquer the new challenge, or we'd perish."

"You'd take a chance like that?" Ker-jon demanded.

Cluny-ann nodded vigorously. "We have to. It's either that or we'll sink lower and lower, until there's nothing left of civilization."

"Okay," Ker-jon spread his hands out wide. "You're both way ahead of me. How will we do it?"

THE ALBINO smiled. "We've found the old records which explain how the Ark runs. With them to

guide us, we'll try our hand at sabotage."

"Hold on. Just hold on! Why do you have to do that? If you have the records, why don't you simply take control of the machinery and force Flam-harol and his crew to step down."

The albino shook his head. "That's precisely what we *won't* do. All the Ark has ever had to face was human challenge, one man usurping control from another. That's extends down to all levels, Ker-jon. We have to make a complete break with that tradition, or we'll find ourselves right back where we started from, just as Flam-harol did. Psych-tech Ab'nath will stand behind me on that, and he knows what he's talking about."

"You're telling me," Ker-jon said, remembering the dream.

"Then it's agreed. You and the girl will study the records, learn the location and function of each piece of machinery on the Ark. There are just a half dozen of us: Ab'nath, the two 'policemen', Cluny-ann, you, myself. When you're ready we'll do some fancy tinkering with the key mechanisms. And this is important, Ker-jon: we must be so thorough that, alone and without either additional education or aid from others, we won't be able to repair the damage. A danger, yes—but that's the only way it will work."

Ten days, twenty. Thirty. With Cluny-ann, Ker-jon pored over the old books. Terms swam through his head madly—vectors, constants, laws of thermodynamics, others. He could not hope to understand the vast amount of theory behind them, not now, not yet. But it did not matter. He sought a working knowledge, an engineer's knowledge, the knowledge of a physical-technician, when there had not been a physical-technician on the Ark for generations. More particularly, a physical-technician bent upon temporary destruction...

Wi'son-gil kept him informed of Flam-harol's new regime. Discontent everywhere. A riot in the 'ponics room—quelled. Another in astro—also quelled. But discontent hovered everywhere, with no adequate channel through which to manifest itself. It faded, became bickering; Flam-harol was more powerful every day. Probably, he considered himself benevolent—

Green-uniformed albinos shuffled about the corridors. Their too-white skin looked sickly under the night-lights, but they seemed cocky. Ker-jon ducked around a corner, pulling Cluny-ann with him. "Careful—that one almost spotted us!"

They crept forward, stalking silently on bare feet. Ker-jon had his key to the 'ponics room, and his heart was pounding furiously when they reached the door. What if Flam-harol had had the lock changed? He chuckled softly. He'd been reading too much about the physical sciences; no one knew how to change a lock! Oh, they could oil it if it clogged with rust, but that was all. Either the old lock remained, or no lock at all.

He inserted his key, twisted, heard the tumblers fall. The door swung in silently.

Past the rows of squat, ugly 'ponics tanks they walked, the dank vegetation smell heavy on the air. Moisture dotted the water pipes with gleaming droplets, some unknown liquid bubbled in a vat nearby.

They paused at a great shining mound of machinery. "It's called a generator," Ker-jon said. "But don't ask me what it does. I only know it's crucial. Umm-mm, listen to that."

The machine throbbed. He'd worked in the 'ponics room as a bio-tech, and he'd always taken the huge machine and its humming noise for granted. It was there, and that meant it had a purpose. It functioned; all you had to do was put oil into the little hole

whenever the sound rose to a shriek. But now the purpose meant something. This generator kept the tanks going, producing air, food, water . . .

Ker-jon wielded his screw-driver clumsily. Only menials—formerly mutants and now non-mutants—played with such tools. If the Ark passed through a particularly brilliant area of space, if the blackness outside the ports in the astro-room churned into a seething mass of light, the menials used these screw drivers and fastened thin metal shields over the ports.

Insert it there, yes! And twist. See, the little plug comes loose. And now another.

Suddenly, the entire casing fell away, and Ker-jon peered into a maze of intricate wiring. *Remove that one, that one, and that one. Careful, don't touch that or you'll receive a shock—whatever a shock was—*

Without warning, the machine stopped its humming. Nearby, the liquid which bubbled away merrily in its vat gurgled once or twice, then subsided. The silence closed in from all sides.

THREE DAYS later, Ker-jon received a summons from Flam-harol. The ridge-head look worried, and he did not try to hide it. "You were a bio-tech first class, hydroponics division. I—I have a job for you."

"Yes? What's that?"

"Something happened. I don't know what, but a machine which used to hum doesn't do it any longer, and the vegetation in 'ponics looks a little sick. The level in the water-storage units is lowering—"

Ker-jon wondered how long the air would last. He almost sensed a difference, a thickness, a necessity to breathe more deeply, perhaps more rapidly. His imagination, probably, because according to the books, air would continue to be manufactured as long as the plants lasted. "What

do you want me to do?" Ker-jon said.

"Fix it, that's what."

"I can't."

"What do you mean, you can't? Don't cross me, Ker-jon; I'll have you detained—"

"That isn't what I mean. I know the humming machine you're talking about. I don't know how it works; no one does. Of course, we can find out. If we study the old records—"

"Bah! Say, do you know any good astro-techs? The machinery in the astro-room doesn't work. I don't know the function of that room, Ker-jon, but I've heard it's important."

"We've all heard that, but no one knows why. We could find out, though."

"How?"

"By studying the old books." Ker-jon wondered if it had been Ab'nath or the old albino who had tampered with the astro-mechanisms.

Flam-harol got up wearily. "Forget it; forget I called you. I can see you'll be no help at all. I've heard talk about studying the old records. All over the Ark. But man, think! You can't sit down in a hole someplace and read a book to solve anything. That just isn't the way things get done."

"You'll learn," Ker-jon said, getting up to leave.

That same afternoon, Wi'son-gil made a mistake. He called a mass meeting, declaring that he knew a way to stop what had caused growing panic on the Ark. If Flam-harol hadn't become frightened, the panic never would have arisen—Ker-jon knew that. But when you stroll through the now-silent 'ponics room and see brown-edged, stiffening vegetation where once the place had been warm and richly green, you worry. Especially when you've been led to believe, along with everyone else, that everything

within the Ark depended on the 'ponics room.

The crowd gathered, noisily at first, but the old albino quieted them. Ker-jon realized with some surprise that the man could be an impressive figure. Small and thin, he yet maintained an air of confidence. His fine white hair framed a gaunt, thin-featured face, and from a distance the pink eyes almost seemed alive with fires.

But mostly it was the voice—calm, soothing, sure of itself, a father talking to his children, telling them of the wonders of a lost science, of the role it once had played in the construction of the Ark, of a time when their ancestors had lived elsewhere, not on the Ark at all, of a time in the indeterminable future when they would leave the confines of a tight little world for one where a man could spend his whole lifetime walking and never quite reach the other side. Telling them, too, of the role that lost science must now play again, to repair the Ark. Telling them that they must strive together to master this tool of their past in order to build their future, to learn what they were, and where and why and how, to use this knowledge for the tasks that lay ahead.

He had them spellbound, weaving fanciful legends of the past and a place called Urth, explaining their greatness to them and their destiny to conquer a far place in the name of mankind which was all of them and infinitely more. And telling them, above all, that ridge-head must be brother to scaled mutant, and both to albino, and all to non-mutants. They half-wanted that, anyway; they'd had enough of fighting all their lifetimes, and what had been lacking was a common cause for all of them.

ALMOST, it worked. But Flam-harol appeared in the meeting room, stalking in with his armed guards—not albinos, not now when he expected troubles. But with ridge-

heads, big, powerful, naked to their waists and ready for trouble, the huge muscles bulging...

"Stop that man!" he cried.

Murmurs in the crowd, but no one moved.

Wi'son-gil kept right on speaking.

Ker-jon realized the ridge-head's intention too late. He stood just below the dias, eyes intent upon the old albino. But something made him turn, and he bellowed a warning.

Flam-harol had raised his needle gun.

Things happened fast after that. Cluny-ann must have seen the danger too, for she pushed her way through the crowd, elbowing people out of her way, reached the ridge head. They began to grapple, great-thewed mutant and slim, fair-haired girl.

It didn't last long. Ker-jon leaped upon the dais, throwing himself at the albino, pulling him down. It was then that Flam-harol fired.

Ker-jon felt the needle brush past his cheek, saw a growing stain of red on the albino's jumper. The old man sagged to the floor, the faintest trace of a smile on his lips. When Ker-jon knelt beside him and felt for the heartbeat, the old man was dead.

Confused, the crowd milled about. People jostled one another, some shouted angrily. Meaningless action without a leader—

Ker-jon tore his way through the mob. Cluny-ann lay in a sobbing heap on the floor and the ridge-head pointed his weapon at her, shouting for his men to disperse the mob. None of them moved. Undecided, they stood there uncomfortably, shuffling their feet. Clearly, they hadn't responded favorably to cold-blooded murder.

Flam-harol whirled, swinging his needle gun around to face Ker-jon, but he didn't make it. They locked together, stumbled, fell to the floor and rolled about. The needle-gun clattered away harmlessly. Two or three ridge-heads tried to intervene, but growling ominously now, the crowd kept them away.

He had a fight on his hands, Ker-jon knew. And sometimes an immensely complex situation could boil down to something as elemental as that. If he lost, the old order would remain; if he won...

The thoughts hindered him, and he longed to drive them from his mind. Just a fight, that was all. Like any of a dozen brawls he had had because of his quick temper. But Flam-harol was superbly-muscled, like all ridge-heads—and strong, strong! He forced Ker-jon over, his back to the floor, and he felt strong hands closing about his throat and a rising-falling motion which pounded his head against the hard metal.

Out of a spreading haze, Flam-harol's face leered at him—

Kerjon groped upward, blindly, got his fingers at the corner of the mutant's mouth, pushed in and tugged. Flam-harol screamed, rolled off him.

They stood up, glaring at each other. Ker-jon's breath came in ragged gasps. He wanted to rest, rest...

His hands felt weary, so weary that he hardly could lift them, and that was no good, for hard fists pummelled his head, his shoulders, his chest. He struck back, under the bigger man's guard, pounding trip-hammer blows against his belly.

Grunting, Flam-harol gave ground, lowered his hands to protect his mid-section. Ker-jon darted around him, swiftly, never standing still long enough to be struck, flicking out with his left hand and keeping the mutant off balance by cuffing his jaw. The hands raised again, formed a shield for Flam-harol's face. Hit the stomach, then, pound it, pound it...

ABRUPTLY, it was over. Flam-harol puffed feebly, tried to catch his breath and failed. He spun about slowly, like a battered top, looking for his foe through bloody eyes. Once and once only, Ker-jon crossed his right fist and felt the

knuckles crunch against the mutant's jaw. Flam-harol stood very still for a moment, one eye wide-open, the other swollen shut. Then he plunged to the floor, and he didn't try to rise.

After that, the crowd closed in. Flam-harol was a symbol for everything that had been wrong. A symbol for the fight of man against man, when together men should tackle loftier things. They climbed all over him...

●
"Know what happened today?" Cluny-ann demanded.

"Of course—"

"No, silly. I mean besides us getting married."

"What?"

"A ridge-head and a non-mutant, working together, patched up the astro-room. Oh, it isn't perfect yet, not by any means, but it works."

"And yesterday a couple of scaled mutants and an albino put that generator back together again. They had the books, sure, but I never could have done it. I guess that's where their aptitude lies."

"And listen to this! An old albino, a cousin of Wi'son-gil, I think, discovered all the old books on astronomy. He says Urth was a big globe, really big, which moved *around* a star. We're going to another globe a lot like it, or our children are—and when we get there—"

"The best part of it all," Ker-jon said, "is that everyone's finding the job for which he's fit. Ab'nath tells me he thinks he wants to become an astronomer."

Smiling, Ker-jon took the girl's hand and led her to the library. It was a hell of a place to spend a honeymoon, but there was so much to learn...

The Wisdom of the Ancients

By L. Sprague de Camp

There haven't been very many science-fiction stories based on "Old Egypt", but the legends persist nonetheless. Is there anything to them? Is there any esoteric "meaning" in the pyramids?

Here's an article on the evidence up to now.

THE BELIEF that the ancients were wiser than we forms part of the philosophy of magic. As a shining example, the ancient Egyptians, who possess the peculiar distinction of having had gaudier nonsense written about them than any other people on earth, are credited by magicians and pseudo-scientists with ever-increasing occult wisdom as the centuries pass.

Actually, however, the Egyptians deserve consideration less for what they themselves did than for the mighty deeds attributed to them by later generations. In fact, a whole family of cults and pseudo-sciences has grown up around misconceptions about Egypt.

The pseudo-Egyptologists who man these groups, and "who by a common confusion of thought ascribe to the men of old the wisdom of old men,"(1) tell us the Egyptians built the first civilization; that they appeared suddenly and fully civilized in Egypt without any gradual evolution from the primitive state; that all other civilizations are derived from them; that they possessed an advanced science that has been forgotten; that they were a race of solemn mystics who spent all their time plumbing the secrets of the universe; that they inscribed on their tombs such deadly curses that men who open these tombs die mysterious deaths; and that they built the pyramids for such esoteric

purposes as recording a system of weights and measures or prophesying the future of mankind.

Let's examine each of these beliefs in turn and see what there is to it—or what there isn't.

Historians long assumed that the civilization of Egypt must be older than that of Iraq. Because the Egyptians constructed their temples and other monuments of stone in an almost rainless country, the reminders of Egypt's past could hardly have been overlooked. On the other hand, no stone to speak of is found on the great Euphratean plain, wherefore the ancient Iraqis built in brick—kiln-dried brick (expensive in that treeless land) for facings only, and sun-dried brick, which crumbles when wet, for filling. When a building was neglected, cracks developed in the waterproof facings, letting in the sharp winter rains, and a few years later only a heap of mere mud marked the site of the building.

Since serious archeological work began in these countries in mid-nineteenth century, the Egyptologists and Sumeriologists have raced to see who could push the culture that he loved back farthest, by unearthing older and older remains. Now it appears that the Sumeriologists have won by a thousand years or so, though of course there is no exact date for the birth of a civilization. Hence, early as surely they were, the Egyptians can be pretty

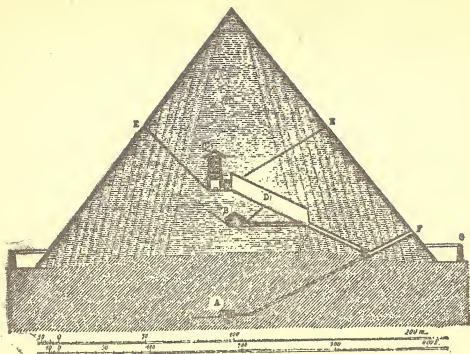


Fig. 1. Cross-section of the Great Pyramid of King Khufu at Gizeh, in its original condition. A: unfinished rock chamber; B: abandoned chamber; C: burial chamber; D: Grand Gallery; E: ventilating shafts; F: entrance; G: wall that formerly surrounded the base of the pyramid.

Upper scale in meters.

well ruled out as the first of the civilized men.

According to the second mistake about Egyptian civilization, it sprang to existence at once without any slow transition from primitive culture. The fundamentalist Southall, pleading for Adam's existence, asserted in his *The Recent Origin of the World* (1875) that: "The Egyptians had no Stone Age, and were born civilized." (2) Actually the discovery of the Egyptian Stone-Age cultures had begun when Southall wrote; today you can trace the rise of Egyptian culture step by step from the Neolithic Merimda people, who wore skins, lived in mud houses, and practised a crude agriculture, to the highly civilized men of the Fourth Dynasty. You can with the eye of the mind watch them substitute clay pots for stone pots, add handles

to their pots, learn the art of kiln firing, and lastly, during the first few dynasties, adopt the potter's wheel.

Another legend concerns the vast lost scientific knowledge the Egyptians are supposed to have had. Now the Egyptians did make some useful discoveries; nothing, however, like those that have been attributed to them. Although their medicine was scientifically ahead of that of Babylonia, like that of Babylonia it consisted mainly of magical spells. To posterity the Egyptians' main contribution lay in the fields of art and architecture. For the origin of modern science, religion, and commercial practices we derive much more from ancient Iraq.

Moreover, the most creative time of Egyptian society came early, during the first four dynasties. Thereafter Egypt became absurdly conservative,

giving birth to no more new ideas. The arcane wisdom of the priesthoods of Egypt comprised such items as knowing when the Nile was going to rise, and how to construct a right angle to re-survey the farmers' fields after the annual Nilotic flood had obliterated the boundaries thereof. Naturally they kept such things secret as long as they could; if anybody at all could have told the time of year or surveyed his fields, there would have been nothing in it for the priests.

EGYPTOPHILES generally make two inflated claims about the arcane wisdom of Egypt. The extreme diffusionists, who have been waging a battle on the fringes of anthropology for the last thirty years on the question of the diffusion of culture versus independent invention, aver that all civilization comes from the land of the Nile. Founded by the psychologist W. H. R. Rivers, and long led by the anatomist Sir Grafton Elliot Smith, this school tried hard to derive the basic techpics of civilization, including those of the Mayas and Incas, from one—or a few—Old-World centers.

I call them "extreme" because all anthropologists quickly admit that a vast amount of diffusion has happened. Nobody claims that all the people who today use matches or guns invented them. But extreme diffusionists do not believe in independent invention at all or at most hardly at all. Elliot Smith, following the German scholar Eduard Braun, derived all other civilizations from Egypt, affirming, on very weak grounds, that discovery of copper-smelting stimulated the Egyptians to go on to develop writing, farming, and all the other elements of civilized culture. However, the evidence both for the age of the Sumerian culture, and for the independent origin of the native American civilizations, is weighty enough to put the extreme diffusionists' claims practically out of serious consideration.

Egyptophiles of occult leanings press another claim: that the ancient

Egyptians once possessed, then lost, highly advanced arts and sciences. As the modern Egyptian poet Hafiz Ibrahim put it:

For they had crafts beyond our ken,
And sciences that lesser men
Lack wit to grasp; with dexterous hand
To rich invention wed, they planned
Fair idols men might be forgiven
For worshipping in hope of heaven, (2)

This claim won't bear investigation either. For example, it's sometimes said that the pyramids could not have been built without machinery. But when you investigate, you find that the pyramids were erected by very crude methods indeed, without such simple aids as pulleys and tongs. The workmen sledged each great stone into place and levered it off its sled—a process requiring, not science, but organizing ability and vast muscle-power, both of which things were at the command of the men who wore the Double Crown of Upper and Lower Egypt.

The Egyptians' one "lost art" was not quite what you'd expect. The pre-dynastic Egyptians made flint weapons and tools of extraordinary perfection, which we cannot now imitate. But they lost the art when copper came in and drove the high-grade flint-workers out of business. While a few such "lost arts" existed in various cultures, we could no doubt recover them if we wanted to badly enough. A few decades ago, an Englishman tried to recover the lost technique of making torsion catapults such as the Romans used. He found, alas, that every time the device was fired, the skeins would break, or the throwing-arm snap, or something else fail. If I remember, he finally solved most of his troubles—only to have the machine, the next time it was shot, hurl a big boulder into a neighbor's greenhouse. That was the end of the project.

IF MAGIC be considered wisdom, the Egyptians had plenty of this *ersatz* "wisdom". As the Babylonians excelled

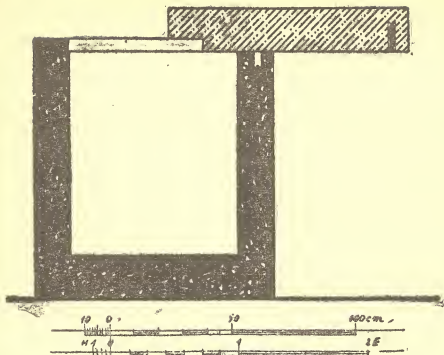


Fig. 2. Cross-section of Khufu's sarcophagus, showing the lid half on, and the recesses in lid and trough for stone bolts to lock the lid in place. Upper scale in centimeters.

in divination, the Egyptians surpassed in sorcery. They not only commanded demons and minor spirits, as all sorcerers do, but bossed and bullied their very gods as the devout Babylonians never dared to do. But then, the Babylonian gods were more formidable—irascible and vindictive, rather than amiable and easy-going like most Egyptian deities. An Egyptian sorcerer sometimes dared to threaten that, if the god refused to comply with his wishes, he'd overthrow the four great pillars on which the sky was supported, and bring the universe down in crashing ruin.

Like many other gods of magic, the Egyptian god of magic, Tehuti (Greek, *Thoth* or *Tat*) was also the divine scribe. The combination of magical functions with patronage of letters points to a time when reading and writing, being confined to the priest-hoods, were considered magical arts. And the difficulty of Egyptian writing

lent strength to this idea.

The Egyptians had started with picture-writing, which in time became conventionalized into ideographs, which in turn were assigned phonetic values, first whole syllables and finally single sounds. Unfortunately for progress the system was frozen—that is, standardized—before the process was complete, so that the Egyptians were left with a mixture of ideographic, syllabic, and alphabetic signs; and moreover their spelling was even more irregular and irrational than that of our own English. While some people, fascinated by the little processions of men, beasts, and other objects, have mistakenly deemed this script advanced or scientific, hieroglyphics were actually, if perhaps the world's most decorative writing, by no means its most practical.

Tehuti, god of magic, was credited with authorship of the *Book of Thoth* of sinister occult repute, which first

appeared in an Egyptian novel, *The Story of Setnau Khaemuast*, known from a Ptolemaic papyrus. The Egyptian priestly literature was also attributed to him, including such works as the celebrated *Coming Forth by Day*, better but less authentically known as the *Book of the Dead*. This was a collection (or a number of collections) of incantations which the priests compiled for the use of the spirits of the dead. You were supposed to memorize these spells and then, after you died, to use them to escape from your tomb, reach the Osirian heaven, pass the tests you would there undergo, and at last assure yourself an important official position in the divine bureaucracy.

Later in his history, Tehuti was merged with the Greek god Hermes; to the merged god, known to Graeco-Roman writers as Hermes Trismegistus ("thrice-great") were attributed the windy metaphysical speculations of the Alexandrine Neoplatonists. Subsequent writers transformed Thoth-Hermes into a mortal king who had ruled the land of Egypt about the time of the Flood and had written thousands of books on magic and alchemy. Modern occultists sometimes keep up the pretence that this god was a historical character.

To take up another pseudo-Egyptological doctrine: there is, despite fantasy-writers and occultists, little reason to regard the Egyptians as a race of stern mystics or profound intellectuals. Most sweeping assertions about the men of a given race or nation are fallacious anyway, because of the great variation within any such group. People repeat statements of the form: "All Frenchmen are thus-and-so", not because they know enough Frenchmen to judge, but to expand their own egos by sneering at others. In any case, such evidence as exists about the Egyptians suggests that many were jolly extroverts, fond of games and parties and picnics, and, like many modern Americans, practical and industrious, not at all interested in the secrets of the cosmos.

THE TOMB-CURSE legend was floated by some enterprising journalist when the frail Lord Carnarvon died of pneumonia shortly after King Tutankhamen's tomb was opened under his supervision in 1922. The tomb, in the story, bore the inscription: *Death shall come on swift wings to him that touches the tomb of the Pharaoh*. For years thereafter, when death took any member of Carnarvon's expedition, newspapers told their shuddering readers that the "curse of the Pharaohs" had struck once again. (The Hearst papers are still at it.) The facts are that no such inscription existed, and the scientists lived on the average to normal expectancy. Two, Kane and Lucas, recently died aged seventy-nine.

That leaves the pyramid myths to dispose of. In spite of their awesome reputation, the pyramids really are nothing mysterious. They evolved from a type of tomb called a mastaba, a rectangular structure of brick or of stone with in-sloping walls set over an underground chamber. Third-dynasty kings, enlarging their mastabas, built truncated pyramids, added walls surrounding the pyramids, made supplementary tombs for their royal relatives, temples, and ceremonial avenues leading down to the Nile.

Then about 3100 B. C. King Zoser Neterkhet erected the step pyramid at Saqqara, having five stages or steps like a Babylonian ziggurat. This first pyramid is said to have been designed by Zoser's vizier Imhotep, remembered down the ages not only as talented architect, but also as statesman, physician, writer, and wizard. If he did half the things attributed to him, his must have been one of the world's greatest minds, along with Newton and Archimedes.

A few decades later King Sneferu invented a pyramid with sides sloping smoothly clear to the top—the first "true" pyramid. About a half-century after this, King Khufu ("Cheops") constructed the Great Pyramid at Gizeh and named it *Khut*, "Horizon",

Despite what some say of this monument's having been built more than thousands of years before Khufu by people from Mu or Atlantis, and not being connected with the other pyramids, no reasonable doubt remains of Khufu's authorship of the structure. His name was even found in red paint upon some of the stones.

Moreover, the only historical sources, Herodotos and Manetho, agree in assigning the pyramid to him, though neither for this early period is otherwise very reliable.

In addition, Khufu's pyramids fits perfectly into the evolution of these structures. Although it is the largest and—despite Kipling's verse:

Who shall doubt the secret hid
Under Cheops' pyramid
Was the contractor did
Cheops out of several millions? (8)

—in many ways the best constructed, *Khufu* embodies notable blunders in its construction, belying the perfection that Pyramidologists attribute to it. The differences separating it from its brothers aren't nearly as great as these people aver, for instance. Although *Khufu* is the most accurately oriented of the major pyramids, facing within 4' of true north, Khafra's pyramid and the south pyramid at Dashur are oriented with 10', which is exceedingly good.

KHUFU, oddly enough, changed his mind twice during the construction. Perhaps the secret of the Great Pyramid is that Khufu was a claustrophobe, and, after building had begun, called in the architect, told him the thought of all those tons of stone lying on top of his final resting-place gave him the creeps, and ordered changes in the plans.

In any case he made up his mind not to be buried in the usual underground chamber of rock. This chamber was therefore abandoned, and a large room, misleadingly called the "Queen's Chamber", was built into the structure. This "Queen's Chamber" had been roofed over but not completely floored when Khufu decided to go higher yet. Hence work was stopped on the "Queen's Chamber", and the architects changed their plans to allow for a third room, the so-called "King's Chamber".

When Khufu died, his attendants placed him in a wooden coffin, which they inserted into a plain granite sarcophagus with a heavy stone lid, so made that when it was slid into place, stone bolts dropped into recesses in the trough and secured the lid—it was hoped—for all time. Workmen pushed the sarcophagus up the inclined passages to the burial chamber, then knocked lose some props, allowing a great granite plug to fall into place to seal off the passages.

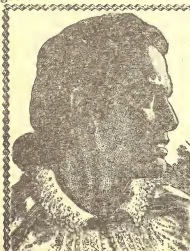
It Was A Mad, Merry, Mix-up!

when Claude Godwin, star of 21st Century costume pictures, found himself involved with a princess of Greenland, kidnapped, and told he was the rightful heir to the throne of England. Don't miss this hilarious feature novel by

L. Sprague de Camp

THE SAXON PRETENDER

leads off our next issue



Khufu's son Khafra built a slightly smaller pyramid, after which subsequent kings continued the custom down to the Twelfth Dynasty, until about seventy pyramids dotted the land of Egypt. Most of the later ones, however, being filled with rubble instead of good cut stone all the way through, eroded away to mere mounds after subsequent builders stole their stone facings.

Because little authentic history came down from the early Egyptian dynasties to the Classical world, people began to commit wild guesses about the pyramids' purpose. Some theories made them displays of royal power (Aristotle); vaults wherein the sages of old stored their archives (Ammianus); Joseph's granaries against the seven lean years (Benjamin of Tudela); models of Noah's ark; astronomical observatories; phallic symbols; Masonic halls; and finally standards of measurement.

These notions can be disposed of with the greatest of ease. For instance, the passages inside the pyramids were blocked up as soon as the kings were buried therein, so they could not have been used for granaries, star-gazing, or Masonic meetings. Also, it is most unlikely that the builders, had they planned the pyramids as standards of measure, would have furnished them with the temples and other accessories that once surrounded them. In short, modern archeologists agree with Herodotus that these buildings were tombs and not a thing more.

Robbers penetrated nearly all the pyramids, despite the granite plugs, false passages, and other precautions that their builders took. Khufu's pyramid held out to the ninth century, when the Caliph Abdallah al-ma'mun got past the plugs by boring through the softer limestone around them. The stories of his entrance imply that he smashed the sarcophagus lid and tore Khufu's mummy to bits for its gold. Subsequently Saladin, the famous twelfth-century Sultan of Egypt, stripped the facing from Khufu's pyr-

amid to build the city of Cairo. In the early nineteenth century the rapacious and vandalistic pasha Mehemed Ali, who destroyed many ancient temples for building materials, proposed to demolish poor *Khuit* completely for stone. Fortunately he desisted when he found a better source of supply in a quarry near Cairo.

THE MODERN pseudo-science of Pyramidology began when Colonel Howard Vyse measured the Great Pyramid in 1837. A London publisher by name of John Taylor evolved from Vyse's figures the remarkable theory that Khufu's Folly had been built by Noah and his sons under divine guidance, and incorporated in its structure such cosmic wisdom as the true value of the ratio of a circle's circumference to its diameter. Taylor converted to his theory a Scottish astronomer, Charles Piazzi Smyth.

This Smyth (named for Piazzi the Sicilian astronomer; and a son of Admiral William Henry Smith, a noted scientist in his day) was a good astronomer, who did notable work in spectroscopy. He was also an enthusiast and a religious fanatic. Like any pseudo-scientist he first published a book, *Our Inheritance in the Great Pyramid* (1864), and then went to Egypt to confirm the opinions set forth therein. He spent four months in measuring the pyramid by means of an assortment of extremely accurate instruments, and with the help of a gang of temperamental Egyptian Arabs. However, he omitted to measure the most important dimension of all—the length of the base side—no doubt for fear of upsetting his theories. Upon his return to England Smyth sent the Royal Society a paper on some of the occult wisdom he'd uncovered, and, when they refused it a reading, haughtily resigned his fellowship.

Wilson and Smyth claimed, among other things, that the sides of the Great Pyramid were perfect equilateral triangles; that the distance

around the base was 36,524 "pyramid inches", or 100 times the number of inches that there are days in the year; that the height of the pyramid was $1/270,000$ of the earth's circumference, or one-billionth of the distance to the sun; that its mass was one-trillionth that of the earth. They averred that the sarcophagus was a standard of measurement (like the Standard Meter in Paris) which, however, worked in a fantastically complicated and illogical way. The unit of volume, they thought, was $1/10$ of a cube whose edge was twice the Pyramidological unit of length, multiplied by the earth's specific gravity. This system of mensuration they alleged to be the ancestor of the English system.

Scores of such marvels are listed in the books of the Pyramidologists, but, like the idea of Joseph's granary, they, too, dissolve at the touch of intelligent examination. For example, the "pyramid inch" of which they make so much is really an imaginary unit, invented by Smyth himself. Since the original

height and mass of the pyramid are not known, because of the dilapidation it has undergone—estimates of the original height vary by more than thirty feet—no man can say what ratios they bear to the sizes of the earth and the Solar System. As for the idea that the sarcophagus comprised a measure of volume, none but a lunatic would take as a volumetric standard a vessel holding the awkward amount of a ton and a quarter of water (as would this trough) and then, moreover, shut it up in an artificial mountain so that it couldn't be used.

NO REASON whatever exists to think that the Fourth-Dynasty Egyptians suspected the earth to be round, and therefore to have a circumference—let alone a specific gravity, the very idea of which was unknown until Archimedes discovered it, thousands of years after Khufu. The Egyptians, like the early Sumerians, thought the universe shaped like a shoe-box; and although they developed a crude



"What have you got to live for? There hasn't been a single new biological discovery for nearly a century. Or any other kind of discovery, come to that. Science is dying on its feet, and art is flat on its back, dead."

Yes, civilization was now secure—and perfectly stagnant. So they instituted an

EXPERIMENT IN GENIUS

this satirical novel by
William F. Temple

leads off the November issue of

Also in this issue

THE MYSTIC TRANCE

Special Article

By L. Sprague de Camp

FUTURE

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astronomy, with their own system of constellations, they never got beyond the shoe-box stage until Greeks and Babylonians taught them better.

Smyth believed that the Great Pyramid had been built by the Old Testament patriarch Melchizedek, who was supposedly Jesus Christ in an earlier incarnation. Hence the system of weights and measures incorporated in the structure possessed divine sanction, and so, naturally, did the irrational English system which he wrongly supposed to be descended therefrom. Pyramidologists used this argument against the Metric System, which they denounced as "atheistic" because it was invented in France during the French Revolution.

Smyth also embraced one Menzies's vagary, that measurements in the Grand Gallery, which leads to the burial chamber, symbolized in advance the future history of man. Smyth inferred from these measurements that a great miracle, comparable to the Second Coming or the Millennium, would occur in 1881.

In 1881, no miracle taking place, the Egyptologist W. M. Flinders Petrie made the definitive survey of the Great Pyramid. Because Petrie's father, a prominent engineer, had been an adherent of Piazzi Smyth's theories, Petrie himself had leaned in that direction. But once on the actual ground, he was soon disillusioned; he found that most of the measurements by Smyth had been grossly inaccurate, despite his expensive instruments. Ever since Smyth's time, Pyramidologists have haunted the pyramids with tapes and transits. Petrie even found one of these cultists trying to file down a granite boss in the vestibule of the burial chamber to the size that his theory demanded.

It has been shown time and again that, with enough figures to juggle, you can readily extract cosmic results from unlikely material. Borchardt, as an anti-Pyramidological joke, derived the base e of natural logarithms from the slope of Sahura's pyramid. Bar-

nard, by juggling the dimensions of the Temple of Artemis at Ephesos, got the moon's diameter, the length of the lunar month, the date of the building, etc., and a Professor Norman obtained equally impressive results from the blueprints for Building C of the Harvard-Observatory.

However, the cult mind is proof alike against the arguments of science and the lessons of experience. David Davidson, substituting Petrie's figures for Smyth's and adding in (for no rational reason) the lengths of the reigns in the king-lists of the Egyptian historian Manetho, came up with a new body of prophecy according to which a great war would break out in 1928, and the Second Coming of Christ would occur in 1936. Most Pyramidologists followed Davidson till these occurrences failed to materialize. Now, naturally, these events have again been cast ahead into the future—a process that can go on for time out of mind.

This survey of the pseudo-sciences based ultimately upon the notion of the wisdom of ancient Egypt branches out into many fields, and shows what a vast house of cards can be constructed upon the basis of a single misconception. It also shows the advantages of the scientific approach to such questions as the origins of the Egyptian civilization and the authorship and purpose of the pyramids. While the cultists and pseudo-scientists have been promoting their eccentric theories, historians, archeologists, and anthropologists have been reconstructing the life of the predynastic Egyptians and tracing the origin of the labyrinth of passages in the Great Pyramid to Khufu's probable claustrophobia. Which approach do you prefer?

1. E. B. Tylor, *Primitive Culture*, I, p. 40.
2. S. R. K. Glanville, *The Legacy of Egypt*, p. 355.
3. *A General Summary*, in *Department Ditties* (1899 ed.) p. 11.

THE WAY I SAW IT

PARAMOUNT and George Pal, two of the forces behind that excellent production, "Destination Moon", have now come forth with a cinematic version of the famous Balmer & Wylie novel, "When Worlds Collide".

The book really requires a movie as long as "Gone With the Wind" to get as much in as the authors put into their novel; thus, making this picture the standard length required a great deal of compression and cutting. It's a pleasure to report that neither have harmed the main story, and that the screenplay of "When Worlds Collide" can stand by itself.

One goes to the movies expecting the worst, and more often than not, sees just that; not remembering all the details of the book—I read it when it first appeared in Blue Book Magazine, back in 1932—I knew that a number of minor changes wouldn't bother me too much. But I frankly expected a De Mille spectacle, with plenty of tear-jerking and slushy melodrama on the side.

Gentlemen—and ladies—I was so wrong!

There *is* a bit of melodrama in the picture, a slight concession to the soap-opera-conditioned public, but it is not dwelt upon, and is strictly a matter of minor characterizations. The tremendous destruction scenes, which one expects, are underplayed, compressed, a few telling shots used to symbolize what you do not see. The script writers chose the race-against-time angle for main emphasis, and it is this which keeps what is actually a slow-moving story alive and suspenseful.

There are, glory be, no "mad" scientists, nor are the scientists in the film presented as ridiculous specimens, helpless outside of the range of their specialties. When the financier, whose backing is needed to build the ship, demands that he choose those who will be selected for survival, Dr. Hendron flatly refuses and bullies the man into supporting him anyway. Not in a comic-strip way; he merely tells the man, with calm dignity, that it's his money or his life—

unconditional support, or the financier will have no chance himself.

One aspect seemed disappointing, at first. I expected an attack upon the ship from outside, but it never came. I expected that those who did not draw tickets for survival (the selections were made by lot) would make one last appeal to force. They did, but too late.

Actually, this is sound. The situation was an overwhelming and overpowering one. People felt helpless in the face of it, and eagerly turned to such authority as could stand up and give what sounded like sensible orders. The people who worked on the ship and the expedition knew that only a few of them could possibly be selected to go with the ship; it was much like war, where the individual soldier feels that he can't get out of it, but that perhaps if he does what he's told, he'll be lucky and come through. (And in this case, when the whole planet was inevitably doomed, there could be no desertion.) When the lots were drawn, those who lost were resigned or apathetic, at first. Finally, they began to rebel, and worked themselves up to revolt. But the time was too short; and, as in so many other instances in human affairs, the revolt came too late.

There is one flaw in the preparation for the expedition, which was necessary for the sake of "good taste"; we see two specimens of the various animals being taken along. In any Noah's Ark of the present day, this is unnecessary; females and spermatozoa are all that would be needed. But you can't be that accurate if you want to display a film to the millions, relatively few of which would accept the proposition—let alone the question of censorship. There are other questionable details, but none really important to the story.

I am told that this movie is actually as long, if not a little longer, than "Destination Moon"; it seemed shorter, to me—and that is a compliment in a sense; when one is aware that a movie is long, it means

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A needle gun, held by the roboe, pointed directly at Don. The hithertofore pleasing features of the roboe, common to all of them, were now set in harsh lines.

SURVIVAL OF THE FITTEST

They weren't robots, even though people called them that; they were androids and they wanted to be treated as rational beings. What?—screamed humans—treat machines as equals?

A NOVELET by Gene L. Henderson

DON STEPPED into the small inner laboratory and closed the door quickly, unseen latches automatically clicking into place and a low hum denoting that the lethal field on the other side would burn any non-metallic object entering its range to a crisp.

He turned wonderingly to the three men watching him. Dr. Stone, his superior, a tall, stooped figure dejectedly standing to one side, hands clasped behind him. The other two were strangers, one an Army general and the other, by far the most cheerful in appearance, nattily attired in a trim business suit.

"I'm sorry that I took so long," he

apologized to Stone. "I've been examining some of the records found in the caves uncovered in Mexico, sir."

"What's this about caves?" demanded the General, a scowl on his heavy-jowled face.

Dr. Stone turned from the eager Don to explain politely. "We have a team digging in ancient ruins in Mexico, General. They've uncovered perfectly sealed caves and tunnels that we at first thought were Incan. However, it has since been found that they are lined with an alloy which has proven impervious to any type radiation. That, plus the fact that printed records are now being upturned, points to a superior science."

Even if the "survival of the fittest" theory (grafted onto Darwinism by popularizers) is a good one, it's still a matter of hindsight, and not a case of deciding in advance which or who ought to survive. However, does this stump our hero, our indefatigable human being? The answer is a hearty, if somewhat delusionary, NO! Whether it's America, Russia, China, Lower Slobovia, it's just plain understood that "we are the most fit to survive; therefore we will!"

"Were any weapons or machines uncovered?" the military man asked, avidly.

"None. Our men are carefully sifting a history, however, after finding several mysterious references to a death ray against which no defense existed." The doctor turned to Don again and asked, "Are the protoplasm tanks all right?"

"Yes sir. Several of the roboes are watching now. Sometimes I think that they know as much about it as I do."

The general swelled up and opened tight-pressed lips but his companion held up a hand, smiling at Dr. Stone. The latter cleared his throat, frowning as he said, "You may be more right than you think, Donald."

Donald looked quickly, seeing that his superior was not joking. "I don't understand, sir; what do you mean?"

"How long would it take completely to destroy the tanks?"

Dumbfounded, Don blurted, "Destroy the tanks after the months of culture, Dr. Stone! Why, why..."

The civilian came to his feet quickly and came to the bewildered and indignant Don, saying kindly, "I know how you feel, son. However, the future of the peoples of the world may be at stake."

"But the roboes perform tasks in the radioactive fields that humans find impossible. They..."

The other placed a hand on his shoulder, "I know. They can withstand radiation deadly to humans, correct?"

Don nodded his head and the civilian continued. "Before we go any further, Donald, perhaps identification would be in order." He turned to the general, now standing. "This is General Adams."

Don gasped as he took the extended hand of the Supreme Commander of all military forces on Earth. "And I," the little man continued, "am your Under-Secretary." His eyes crinkled good naturedly and he chuckled at the young man's greater astonishment,

"It's quite evident that your time has been spent in research rather than reading newspapers."

Again Don started to speak but the man, second only to the World President, held up an authoritative hand. "Please don't speak, we haven't much time. Perhaps the General would like to bring you up to date since it would seem that we shall soon be under his direction."

THE GENERAL cleared his throat nervously, then stated authoritatively, "It should be a small operation, once we ferret out all their hiding places."

"Whose?" demanded Don.

"The roboes," snapped the General. "They've declared that, unless they're granted complete freedom, they'll rebel against Earth."

"Rebel? The roboes?" Don turned to Dr. Stone.

"I'm afraid so," admitted the other, creator of the first near-human robots. "The ultimatum was presented by Primo who claims himself to be their elected head."

"But that would be impossible," argued Don. "Why their brains were so designed that a thought of rebellion would require the complexities of one of our brains, something we never have and probably never will be able to implant in their so-called minds."

"I found it hard to believe at first, too," sympathized Dr. Stone. "Especially when Primo personally delivered the message to me to be sent to the Earth Council."

Don sat down, weak after the first shock. "Then someone else must be directing Primo; he'd never turn against you."

"Why shouldn't a machine run wild?" demanded the general. "This 'Primo' is nothing more than an animated calculating machine."

"Which shows your lack of knowledge concerning science, General," stated Don. "Biologically they are more perfect than even you or I, the later ones even having actual bones

for skeletons instead of the earlier model metal ones! They're almost capable of original thought, that drawback alone making them inferior to the human race!"

"Gentlemen," remonstrated Dr. Stone. "I believe that all of this will resolve when we speak to Primo who is even now waiting to see us."

"I still say we should try him for treason and execute him immediately," grumbled the general.

"You forget, General," remonstrated the Under-Secretary with a trace of humor in his voice, "That we're supposed to be superior to the roboes. Let's try to demonstrate it rather than the actions attributed to a machine."

PRESSING a series of switches, Dr. Stone spoke briefly into a speaker.

"All right, Primo, when the door opens, the field will be cut just long enough for one to enter before it automatically goes back into operation. Be quick about it."

The four men watched the door. The latches clicked, then it swung open silently, the humming and warning red light dying out simultaneously. Barely had the waiting figure hurried in when the heavy steel door swung back into place once more.

"Hello, Don," smiled the newcomer, a small patch of metal behind one ear the only visible indication that he was one of the servant roboes. Or had been, if the story just told had been correct. "I'm glad to see that you're here." He smiled at the sudden snort from the general. "But perhaps we'd better get down to business and not waste the time of such important personages." There was another snort from the general.

"Your ultimatum created quite a sensation in the Council," began the Under-Secretary.

"I realized it would," said Primo quietly, looking sadly at his creator, Dr. Stone. "And their decision...?"

"Extinction!" snapped the General.

"General Adams, I am still your

superior," sternly reminded the Undersecretary.

The military man subsided sullenly. "Now then," began the Under-Secretary more softly to the attentive Primo. "You realize that even if the Council were to grant you freedom from the control of man that it would be an admission that you are the equal of the human race."

"That's true," admitted Primo, "but then wouldn't that be facing facts? After all, we can do things that even humans can't."

The Under-Secretary nodded his head, "Agreed. But an aircraft can fly and a submarine can swim under the oceans; does that make them superior to man? Only in that one respect, because they don't have the power to reason."

"You mean original thought?"

"I do."

Primo was quick to the attack, "Then how do you think our demand for freedom was made possible unless by original thought or reasoning power?"

The little man frowned. "That has puzzled both myself and your creator. I don't suppose you'd care to explain?"

"Oh, but I would," came the quick reply. "You undoubtedly remember that the first use of roboes was to man rockets into outer space to avoid exposing humans to cosmic radiation?" A nod was his only answer and he continued. "It was on such a flight into outer space that something took possession of my mind. Man created an image of himself and the cosmic forces outside Earth's atmosphere endowed it with life and a soul."

"Preposterous!" exclaimed the general.

"Is it?" softly inquired the roboe leader. "Then perhaps you can explain why, since Dr. Stone implanted no previous knowledge of military strategy in our minds, that we have a campaign mapped out that will be disastrous both to humans and roboes."

"Aha," exclaimed the general triumphantly. "Now I have you. Assuming your story were to be true concerning your acquisition of true life by cosmic radiation, then I have the facts that will disprove the rest of your story." The thin smile on his face stopped short of gray-blue eyes.

"What facts are those?" asked the Under-Secretary with interest.

"Since the rocket projects into space came under military control, I happen to know that a maximum of fifteen roboe-controlled flights were made. Assuming that each of the roboes—he sneered slightly—"became suddenly endowed with life, how can he"—jerking a thumb at the unmoving Primo—"claim such a large following?"

EVEN DON looked to the roboe with increased interest, as did the other three men. The object of their sudden attention smiled and corrected, "There were but 12 of us to come to life on the flights you spoke of, General."

"Just what I thought," declared the Supreme Military Commander with satisfaction.

"Ah, but that's not all of the story," chided Primo. "Once becoming possessed with reasoning power, it was only logical to submit other roboes to laboratory cosmic radiation. There are probably no more than a mere handful right now who are nothing more than mere mechanicals."

"You'll be wiped out to the last one," threatened the general.

"Perhaps," admitted Primo, "but we'll die fighting for the freedom that America fought for centuries ago."

"Then you absolutely refuse to continue under the same status as before?" asked the Under-Secretary gravely.

"Even if you would allow it without prejudice, we could never submit to slavery again," protested Primo.

"I was afraid of that," said the Under-Secretary with a trace of sadness in his voice. He turned to his mili-

tary companion, "I was fully empowered to authorize you to launch a full military operation, General Adams. As soon as Primo has departed, you may consider a full state of war exists between the Human race and the roboes."

2

DON HURRIED down the passageway after the meeting had disbanded. As he approached the doorway to the immense laboratory containing the protoplasm tanks, a hurrying figure from a side passage-way collided with him.

Stifling an exclamation as he saw who it was, Don exclaimed, "Sheila! What in the world are you doing here?"

"I wanted to find out what had happened at the meeting," she replied, brushing stray strands of golden-brown hair from her face. "You know how father never tells me anything."

"You know that Dr. Stone has more on his mind now than at any other time in his life," stated Don, steeling himself against the pleading and petulant look on the girl's face.

"Why have all of the roboes disappeared so suddenly?" she asked, changing her line of questioning. "Is it to be war after all?"

"Primo absolutely refused to listen to reason," Don explained.

"Whose reasoning?" came the soft question, "His or the Earth Council's?"

"The reasoning of his creators," angrily retorted Don.

She stared at him, eyes wide with amazement. "Don, it isn't like you to talk like that. Surely you don't say that the loud, fat General Adams," she wrinkled her nose with disgust, "is superior to someone like Primo."

His shoulders slumped with dejection. "No, Shiela, but what are we to do? The roboes won't work for the human race any longer and the hu-

mans will not admit equality. Even though it does exist now."

Her face brightened, "Then you are for them. Oh, Don, then it won't..." She stopped at the dark look on his face.

"No, Shiela. I work for your father, Dr. Stone, and will follow his orders with question." He grasped her and turned her down from the laboratory, "You go to your room now," he directed; "I'm going to be busy for awhile."

Her glance darted to the doors of the laboratory. "What are you going to do?" she asked in low tones, an unspoken fear in her eyes.

He looked away and replied roughly, "I said that I have work to do; now will you go away and leave me alone?"

"Don!" He stopped at the horror in her voice. "You—you aren't going to do anything to the tanks, are you?" Still silence from Don. "Why, that would be but mass murder!"

"It's nothing more alive than yeast, Shiela. How could it be murder to kill something that has no brain?"

"It's just as much alive as an unborn child."

BITING HIS lower lip, Don turned abruptly and pushed through the lab doors. The lines of low, gleaming tanks soothed him momentarily. A movement by one made him stop, startled. It was a roboe. The "mechanical" man came towards him, and Don recognized it as one of the regular technicians who worked without sleep as did all of the roboes, it not being needed.

"Everything is in order, sir," the roboe reported; "in three days we should be able to proceed with the creation."

"But what are you doing here?" asked Don with amazement, "I thought that Primo had withdrawn all roboes with him?"

"I don't understand, sir." The roboe was plainly puzzled, his forehead wrinkled. "This is my assigned task."

Shiela spoke from beside Don, "Per-

haps he's one that they hadn't treated with the rays and forgot about in their hurry to leave," she suggested.

"Probably," he agreed, and turned to the roboe. "That's all right," he informed the roboe. With pain in his heart he looked once more at the scrupulously clean cylindrical tanks, the various valves that regulated every minute detail of heat and nourishment to the protoplasm within. The least deviation would result in either stunted and unsatisfactory growth or kill the growing cells.

Without looking at either the waiting roboe or Shiela, he directed, "Set the master temperature control to 120 degrees."

There was a gasp from Shiela and a slight hesitation before the roboe's protest, "But sir, that will kill all the growths!"

"And one hundred lives," accused the girl.

"Those are Doctor Stone's orders; I realize the consequences but it must be done. It could conceivably mean more than one hundred human lives if the new roboes were to be allowed to develop." He kept his eyes down at the toes of his shoes.

"I'm afraid that I must refuse, sir," the roboe replied.

Angered by position with which he felt sympathy, Don retorted, "All right, then step back and I'll..." His voice trailed off at the sight of the needle gun held by the roboe, pointed directly at him. The hitherto pleasant features of the roboe, common to all of them, were now set in harsh lines.

Astonished, Don blurted, "But you...then...you must be a rebel roboe." He took another step forward, "Put that down and do as I told you, or leave!"

THE REFLEXES originally built into the mechanical but living creature caused the gun to waver slightly, then steady as living and thinking reflexes overcame the mechanical ones. There was pain in the

roboe's eyes as he warned, "I'll be forced to kill you, sir. Reinforcements will arrive soon to complete the creation of the new roboes, then we'll depart. But no harm must come to the protoplasm for the present."

Don looked from the roboe to Shiela, who stood to one side, trembling. "Get out of my way," he ordered roughly, turning to the master control panel. Out of the corner of an eye he saw the needle gun come to the level of the roboe's eyes and he instinctively stiffened himself for the shock of the needle that would result in the paralysis of his heart muscles and a quick death. There might be time to reach the control panel and damage it sufficiently to kill the protoplasm.

There was a loud explosion and he fell almost to his knees before recovering. The roboe, he saw to his astonishment, had a big hole blown in his chest and the colorless life-fluid gushed out, before the roboe sank to his knees. The needle gun had fallen out of reach.

"I thought I'd better check in here." came a bellow from the door. Don looked around and saw General Adams standing just inside, an ugly but efficient blaster held in an oversized hand. It leveled at the rapidly dying roboe. "Surprised you, didn't it?"

The roboe said nothing, large eyes pleading with Don like those of a deer that has been mortally wounded and wonders why such a thing should have happened to it. Before the horrified Don could do anything, the blaster shook the lab again and blasted the roboe into an inanimate heap of flesh.

"Oh!" wailed Sheila, sinking weakly to her knees.

"Why you..." began Don moving towards the general, rage blazing from his eyes.

"Don't move," warned the other, blaster swinging quickly to cover him. "I'm in complete control now by order of the Earth Council and it's fortunate for you that I followed or you'd

be lying there like that machine is."

"But that second shot was pure murder!"

"It was a rebel," came the emotionless statement. "Even if I hadn't killed him now, execution would have been certain as soon as practical."

"But he was dying!" wailed Shiela; "that, that was inhuman. We're supposed to be superior, but if you're an example of the human race, then I wonder if we are."

The cold eyes of the general stared at her. "Those words closely approach the borderline of treason, young lady. And in time of war, such as exists now, that could mean a court martial."

"You overestimate yourself, General," Don informed him; "the young lady happens to be the daughter of Doctor Stone."

The other's face dropped in momentary astonishment, "But I didn't know he was married."

"My mother died at my birth," Shiela informed him quietly.

"Nevertheless, I'm in full command of all Earth peoples until the war has been successfully completed; and with such authority, I can order a summary execution of anyone who threatens its progress."

"How do you think the Earth Council would react if you were to kill the Earth's leading scientist and his daughter?" reminded Don, softly. "You'd have to make a complete job of us all, you know."

The older man's eyes blazed from deep in his fat face. "They wouldn't say anything about you," he growled, lifting his blaster again.

"General, what goes on here?" demanded a new voice from behind him. Dr. Stone and the Under-Secretary came into view, rapidly sizing the situation.

The events were quickly reported and, after another severe tongue-lashing from the Under-Secretary, the glowering general took up a position beside the door, away from the rest. Stone reached up and twisted the temperature control knob with no more

a show of emotion on his face than an uncontrolled twitch of a muscle under one eye.

3

THE NEXT few days passed quickly, then commenced dragging along once affairs had been wound up at the laboratory and the last tanks cleaned. More than ever, the weary Don appreciated the effort that the roboes had gone to make his life easier.

There was now time to study the flood of notes and history from the caves, deciphering those that looked as if they might prove of immediate interest. Even Stone forgot the pain occasioned by his destruction of the protoplasm tanks and became excited over the elusive clue they were following.

"If we could just find the formula the writer hints of," he said to Don at the conclusion of one long session of deciphering. "It's apparent that his ancient civilization had an even more violent revolution by their robots than we have."

"Perhaps if we discover their solution in time, Primo will surrender rather than face a needless annihilation."

Stone shook his head slowly. "No, Don, somehow I don't believe we can escape the problem that easily. Our present civilization and robots must arrive at their own solution. In fact, I'm beginning to wonder why all of this material—" he waved at the mass of papers before them—"has been written by one historian and in such a peculiar style—much as one would write a last will and testament. It surely doesn't sound like a victorious race with an overwhelming force at its command."

A slowly throbbing headache made Don stand up forcibly. "I can't concentrate any more, Doctor. It's maddening to suspect there could be a solution right at our fingertips and

yet just a trifle too late to be of any good."

The older man smiled sympathetically. "Why don't you go outside and get some fresh air?" he suggested. "I want to check back and see if perhaps the answer doesn't lie hidden in code, in the material we already have."

DON ACCEPTED gratefully and wandered out into the green and restful gardens. The grass was becoming long, he noted; one more task left by the robots for their masters. He threw himself down beside a fountain and closed his eyes. "Don?" came a whisper.

The soft voice made him start and sit up. Shiela laughed briefly at his nervousness. "Did you think it Primo?"

"I doubt if he'd warn me now."

"But why not, Don? After all, none of the decisions that have been reached were due to you."

"Perhaps not—but I doubt now that any of the roboes could find it in their hearts to like any member of the human race. They're being hunted down like wild dogs; the people all think it part of a game created for their express amusement." He paused, groping for words. "Like—like people at a carnival who shoot at mechanical targets for some cheap award."

"I know," she said gently, sitting close beside him. "It's not really their fault; propaganda, turned out by the ton, beats it into them that this is a rebellion of machines."

There was a moment of silence and Shiela's hand found its way to his. She sighed, "The harm's all been done now; people will never accept the roboes as anything but an animated calculating machine or 'electronic brain.' One or the other must fall."

"I can't understand their inactivity," he puzzled. "With all of their created abilities, I had expected something devastating. After all, they were created for atomic and cosmic work and knew all that the best scientific brains in the world could teach them."

"Did you ever stop to wonder if they wanted nothing but peace and would try to hide out or escape?" she asked.

He stared at her, "Deep down inside you're hoping that they'll succeed, aren't you?"

Shiela traced a long, slender finger around in the grass, not looking at him. "Oh, perhaps. Don't you wish something would happen that would allow them to escape, perhaps even to another world?"

"But that's impossible!"

"What of the space ships now being built secretly?" she reminded him.

"The weight of necessary fuel to another planet would make it impossible for a space ship to take off."

"Rocket fuel, yes. But what of the cosmic drive that father and you have been working on. Isn't it practically perfected now?"

Stiffening, he asked, "Shiela! What in the world do you know about that? Why, even Stone himself wouldn't have mentioned it to you."

She smiled brightly, laughter dancing from sparkling eyes. "So, it is true then."

AS THE REALIZATION that he had been tricked into the admission soaked in, Don's lower jaw dropped. He glanced quickly around, "I've said nothing," he told her, "and make sure that you don't repeat it. General Adams would like nothing better than an excuse to order me court-martialed."

"But he couldn't; you're a civilian!"

"Don't forget that all civil rights have been suspended until the roboes have been exterminated." Shiela's eyes dropped suddenly and she became sad.

"Do you actually hate the roboes now?" she asked softly.

Don was amazed, "Of course not; after all I helped to create them, you know. I've the greatest respect and admiration in the world for them. I still believe that they could have helped to advance man faster and

further than he ever can himself."

"Then why would it be treason to help the roboes escape, Don?"

"Shiela, what in the world has come over you, talking like this? You know that it would be impossible; even if I wanted to."

Tossing her head quickly, the girl changed moods in an instant. "You're right; I was just talking. Let's forget it all and go on a picnic this Sunday." She jumped to her feet.

"Wait, Shiela."

She stopped, inquiringly. "Yes."

For a moment, words came with difficulty. "Well, you know that ever since I've started working for your father that I...I mean you... Damn it; you know how I feel about you, Shiela, and you didn't seem to object."

"No, Don."

"Then why can't we get married right away, sweetheart?"

To his surprise, her eyes filled with tears and her lips twisted in pain. "Don!" she exclaimed, "You shouldn't have said anything."

She melted into his arms and relaxed briefly, supple young body pressed against his. Then, suddenly, she tore herself from his arms and fled towards the house.

"Shiela, wait!" Don called but to no avail; she vanished from sight. He sank slowly to the grass, brow wrinkled in perplexity. It was understandable, of course, that recent events should have upset her, but why the sudden outburst just now? He wondered if she'd been let down by his lack of response to her wild suggestion?

Idly conjecturing, he was about to again sink to the ground when an alarm bell rang and voices began shouting. Thinking that it might be an attack by the roboes on the nerve center of their opposition, he leaped to his feet. A soldier came running up. "Sir," he gasped, "You're wanted in the conference room immediately."

A GAIN IT was the same group; Dr. Stone; the Under-Secretary with a worried frown; a raging General Adams, and several aides. The Under-Secretary noted his arrival with nothing more than tightened lips as he announced, "I have just been informed that the only two space ships in existence have been stolen by the roboes."

"Stolen!" exclaimed Stone.

"Impossible," objected Don; "they'd have to be flown away and the fuel hasn't yet been produced."

"You're wrong, as usual," snapped the general. "They were loaded with ordinary rocket fuel for testing purposes and blasted off."

"Were they tracked?" inquired Dr. Stone, anxiously. "Why the loss of the two ships will set us back at least five years in space exploration."

"They were tracked, but they flew low over the Pacific and were lost," snapped the general. "Missiles are ready even now so that if they attempt to escape into space they'll be instantly destroyed."

"Where could they conceivably have gone to, General?" asked the Under-Secretary.

"We suspect some remote section of South America; the entire Air Force is even now sectoring the entire continent. Africa will come next."

"Even more serious," added the Under-Secretary, "small raids have been made at various factories and central intelligence has deduced that they plan on leaving Earth. In one instance they took nothing but seeds and fertilizers and tools suitable for colonization-farming."

"Still, they could hardly hope to escape Earth without the new fuel unless they'd developed one of their own," argued Stone.

"How long did it take you and your assistant?" asked the Under-Secretary.

"Approximately two and one-half years."

"Did any of the roboes assist in

any matter, other than testing finished fuels or doing menial tasks?"

"No, only Donald and myself have ever seen any portion of the formula only recently perfected. And, it's entirely safe within the inner room you were recently in."

"Strange, that the roboes haven't raided this, of all places."

"Not so strange," broke in the general with self-satisfaction, "when you consider that the entire area is bristling with the latest in our weapons. Even a machine has better sense than that."

"I wondered why your soldiers had so thoroughly ripped apart my grounds," commented Stone bitterly.

The General's face blackened as he sputtered, "This has gone far..." There was a loud booming thud and the lights slowly flickered, leaving the room lighted only by the dim light of the fast-fading day. Almost immediately a deep-throated alarm horn began its steady "Boop-boop-boop," summoning all off-duty guards to their emergency attack stations.

"Everyone stay right here," ordered the general briskly, hurrying towards the newly installed battle phone. Brief queries and orders were quickly barked into the mouth-piece; much as he disliked the man, Don had to admire his brisk efficiency.

THE WHISTLE of jets overhead drowned out all other sounds but still there was no indication of fighting, either on the ground or in the air.

General Adams turned from the battle-phone, darkly frowning. "The all-clear signal will be given shortly; the alarm was caused by a blast from within the power room and my intelligence reports that it seems to have been caused by someone inside, and not by outside attack."

"Very strange," mused the Under-Secretary. "Wait!" he snapped, jumping to his feet. "The fuel formula—they'd be after that, naturally!"

Followed by a small group of sol-

diers, they were all soon standing before the open door of the inner room, light shining brightly from within but no hum of the force field.

"But that's impossible!" exclaimed the old scientist.

"Even after the power supply failed?" asked the Under Secretary.

"Naturally. I foresaw long ago that if anyone were to try to enter, their first act would be to destroy the main power plant. So that eventuality was provided for by a small auxiliary designed to go into operation upon the failure of the main plant." He pointed to the lights burning inside. "Look, there's still power."

A quick examination disclosed that the formula had been taken. "How long would it take to manufacture a sufficient quantity for space travel?" asked the Under Secretary.

"A week, ten days perhaps. The ingredients are relatively simple and easily obtained."

"A clamp has been set around the entire area with orders to shoot anyone leaving," the general informed them sourly. "Although I think that everything was arranged from the inside."

"Explain yourself, General," ordered the grim-faced Under Secretary.

"Well, even though I was never informed in detail concerning the safeguards surrounding this inner sanctum—" he snapped the last two words, "at least I could see that it would require someone with a special knowledge to enter. Correct?" The last was directed at Stone.

"That's right," affirmed the other. "Donald and myself are the only ones with the special keys I designed and constructed. They're made of several alloys and, when inserted in the outside slot, a spectroscope determines whether or not it's the correct key. Even a minor deviation in the alloys would sound an alarm."

"And only your assistant and you

have possession of the two keys in existence?"

A curt nod of the head was his only reply so, in louder tones he demanded, "Then I'd like to see both keys right now, since this is a matter involving security of an Earth secret. One that should've been entrusted to me long ago."

STONE instantly had his in sight and all eyes swung to Don who was fumbling in his pockets. "I had it earlier in the day," he mumbled in a low voice. At last he had to admit that he didn't have the key. Men sent to investigate his room reported that neither was it there.

"Call everyone in the house together immediately," ordered the general; "I thought all along that it was an inside job."

"Everyone is here except my daughter," said the scientist. "The only servants we ever had were roboes."

"Has anyone seen the girl?" asked the Under-Secretary. There were no answers and a quick but thorough search was fruitless.

"Perhaps she went into town," suggested Don.

"Without telling anyone?" inquired the general with lifted eyebrows.

"Is there a law against it?" snapped back Don.

"You seem interested more than usual in springing to her defense," observed the military man with an undertone of triumph that puzzled Don.

"I'd trust her further than I would some others," stated Don with an implication that didn't go unnoticed. Rather than the usual rage, however, the general laughed.

"You mean that you don't believe that she'd turn traitor and help the roboes obtain the formula?"

"Of course not!" the answer was snapped back.

"Then what I have to say may interest all of you. Although my proof isn't positive, it comes close enough for me."

"Let's get to the point," demanded Don.

GENERAL ADAMS rocked back on his heels, then with satisfaction stated, "It so happens that I ordered a thorough security check on each of you in this house. You for instance," jutting his chin to indicate Don, "were rather hard to check completely since the orphanage in which your records were kept was completely destroyed by fire. Other than that, everyone was found to be in order."

"Thank you," said Don, sarcastically.

The interruption was ignored. "Dr. Stone's life was easy to check and, ah, rather routine. Nothing out of the ordinary. His daughter now," he licked his lips; "there's another matter and quite interesting."

A quick glance by Don at his employer disclosed that Stone's scientist's face was white. The general had paused for the effect of his words to penetrate then, rather disappointed at the waiting silence, continued.

"We found no birth record for Shiela, Dr. Stone; can you explain that?"

"It was lost in the confusion of my wife's untimely death ten years ago."

"But there's not even a record in the courthouse; how do you account for that?"

"I'm not concerned with the manner in which government officials conduct their offices," came the curt reply. However, accustomed as he was to the scientist, Don thought he detected a slight note of nervousness.

The other pressed relentlessly, "We checked all of your acquaintances, Doctor; none could say definitely when your wife first gave birth to Shiela. In fact, several were even surprised to hear that you had a child."

"We never had many close friends; my work made that impossible."

"But where did she go to school? Obviously she has a good education."

The scientist's lips tightened; he

shot a look of appeal at Don before looking at the general again. "My wife and I both instructed..." He broke off suddenly, squaring his shoulders. "It's no use going any further," he told the other; "you're pretty certain of the truth and it was bound to come out sooner or later."

The general nodded with satisfaction, "Good, I'm glad that you've come to your senses. Do you want me to tell them?"

"Tell us what?" Don asked.

"That this 'Shiela' was one of the first roboes to be constructed, even before the rebel Primo." Don's horrified gaze swung to Dr. Stone who nodded his head in the affirmative. "So there's no doubt in my mind now that she obtained the missing key in, ah, some manner or the other and has gone to the rebels with the formula they needed."

HOURS AFTER the disclosure that Shiela was not true flesh and blood, Don was still pacing the darkness in the garden.

At last he sat down on the bench and an uncontrolled sob shook his frame briefly as his numbed brain began to relax. No wonder she had quizzed him so hopefully that afternoon; he had thought it the sensitivity of a young girl who hated to see anything destroyed. She had not only been in sympathy with the roboes but one of them.

Now they could travel to the stars and the world would well be rid of them. Or would it? His mind flashed an image of the lovely Shiela when she was amused, gay laughter tinkling out or the mischievous twinkle in her eyes when she teased him.

"Don?"

The youth's head sprang up, hopefully. Surely, with the area guarded so closely, she couldn't have come back.

"Don?" the voice asked again. In the

dim light from the house, he saw that it was Stone. The scientist had seen him by that time and hurried over to sit beside him.

"Forgive me, son," he begged, laying a hand on his shoulder. "If all of this trouble hadn't come about, no one would ever have discovered the truth; she was exactly the same as everyone else."

"That's what I can't understand," protested Don. "I was with you before Primo and the other roboes and knew Shiela then. She—she had consciousness and reason even before then, Doctor Stone."

The older man nodded. "Until Primo's disclosure, Donald, concerning how he obtained his, I was somewhat nonplussed about Shiela. She was modelled after the daughter my wife and I would have liked to have had but never could. All the care and love that a father and a scientist could pour into his effort, went into the creation of Shiela."

"But her inner personalities, what about that?"

"It's apparent to me now. During a later experiment with radiation, at which time she was helping me, a shield broke down and bathed Shiela almost to the point of burning her. Fortunately, I had been behind even another shield or would have been instantly killed. It was shortly after that that I noticed the change in Shiela; my wife and I were so overjoyed that we determined to pass her off as our very own daughter."

Both men sat silently, each lost in his thoughts. "You loved her very much, didn't you?" asked Don of the older man.

"As much or more than if she had actually been my own daughter."

"I know how you feel," Don said softly. "And I can understand now why she's been so evasive with me during the past few weeks. Before that I—we had sort of planned...."

"I know, Don," the scientist broke in. "She told me." They arose slowly,

the thought of Shiela tying them closer together than ever before, and started for the house.

4

SPORADIC RAIDS by the roboes still continued and it was obvious, by the list of supplies they had stolen, that their attempt to escape into space would shortly be made. The military forces had shot hundreds of searcher rockets into an orbit around Earth whose sole purpose would be to seek and destroy any ship attempting to slip through to outer space. They had been so designed that, once having reached their pre-determined orbit, their rocket thrust was broken off and would be reactivated only when directed by radar from the ground or when the metallic bodies of the fugitive ships passed nearby.

Evidence of a super weapon possessed by the ancients now became concrete enough that General Adams proclaimed it a military secret; a team of scientists, headed by Dr. Stone, was put on it. Don neither noted nor cared that the general had seen to it that he was barred from the research.

A growing undertone of excitement from the specialists made him demand an explanation from Stone. The scientist explained, "We've found out that the history was written by the last of the ancients. Some of the early miracles passed down through the ages were evidently the last spasms of a dying civilization."

They were in the garden and he looked at the light flooding the house, shaking his head slowly. "One point that's not clear yet is whether or not they used the weapon finally developed for use against the robots. I'm personally inclined to think that it wasn't."

"Perhaps it won't work," Don said.

"I'm quite sure that it will; in fact, we're in full production right now. You see, Don, the formula was discovered

weeks ago by someone else so there was no holding it back from the government."

"You mean that Earth has a weapon that will destroy all the roboes?" anxiously inquired Don."

"Competely."

"But, but—that means that it would also..."

The old man's head dropped, "I know, Donald. It means Shiela too unless they escape, which is unlikely with all the searcher rockets now in space." He held up a hand as the younger man opened his mouth. "No, there's nothing I can do to stop it; the others have sufficient knowledge to carry on the project without my help."

"Couldn't we warn the roboes? After all, they've not attempted to harm anyone, in fact no one has been killed yet."

DR. STONE'S head came up hopefully, then dropped. "No, Don, it wouldn't work. This way will be kinder since they'll never know what hap-

pened to them. There's no possible way they could escape even if they knew. The notes of this ancient scientist indicate that he, too, faced the moral problem of whether their robots deserved equal right to live. In fact, when the decision had to be made, he decided that total annihilation of the robots was foolish since the master race was already dead with the exception of himself."

"Is that the reason for all of the hurried construction that's been going on all over the country?"

"Yes; towers are being built within 500 miles of each other, ostensibly as a new radar network. Actually, however, the ancient weapon was designed to work on the type of brain radiation peculiar to the robot and cause almost instant death."

"Then perhaps it won't work on the roboes; they may be different."

Stone hesitated, "That may be, and ordinarily we'd test it first, but there's no roboes left in captivity and no time to construct others. But, it'll only be

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a small matter to change the settings to correspond to the roboes' minds if this first attempt fails. Somehow I have an idea that it will function as the ancients designed it to—horrible as that may be. But before that happens, son, there's something I must tell you."

A heavy voice broke in, "At least you won't be around when it does occur, Dr. Stone."

Their heads snapped around in the dim light to see a small detachment of soldiers led by the general. "I can promise you that your trial will be short and there is only one sentence for treasonable thoughts. Come."

"This is utterly foolish," snapped the scientist; "I demand to see the Undersecretary immediately."

"I'm afraid that's impossible," came the smooth reply. "The council is in session and he had to attend. Besides, in such matters any authority is supreme until the last roboe has been destroyed."

"I intend to contact the Council immediately and report your actions," threatened the old man, starting for the house.

"Halt, or I'll fire," warned the general, whipping a blaster into sight. The scientist ignored the command and kept on towards the house. The general leveled his arm as the frozen Don regained his senses and dove at him. He sensed rather than saw, the rifle butt swung at his head by one of the squad and dropped, stunned, as the blaster roared out.

Lights flashed on all over the garden and, raising his throbbing head from the ground, Don saw the crumpled heap that had been Dr. Stone but a few moments ago. Rage coursed through his veins and gave him new strength.

"You—you murderer!" he screamed, leaping at the smiling general who stood over the man he had just killed. The blaster came up again but, before it could be fired, several of the squad

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General Comments

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had leaped in. Before he quite realized what had happened, Don found himself securely tied and being led to the house.

Don neither knew nor cared what charges were brought about during the course of his court-martial. To his surprise, the country had reacted favorably to the general's actions and editorials demanded his summary execution. A grateful public acclaimed General Adams as having saved Earth from slavery at the hands of brutal machines...



DON SAT in his cell, not caring about the practically automatic death sentence. All that he had thought worth living for was gone. Stone had been killed and Shiela would soon be caught by the new ray.

Day was just beginning to break... the rising of the sun to be a signal for his execution. He looked up as the sentry stopped before his cell. They stared at each other and Don said wryly, "I won't hang myself until you go off duty, sentry."

The youth opened his mouth to reply when, all of a sudden, everything seemed to rise, then settle back and crumple. A low roar filled the room and Don frantically scuttled closer to one of the walls to escape falling debris. He wondered if the roboes had attacked or if it had been an earthquake.

The question was soon answered. He scrambled to freedom outside and heard the rattle of small arms fire. He had no definite plan in mind but to get away as far as possible. His prison had been situated near a forest and he dashed for the edge, taking advantage of the confusion.

He had almost reached the fringe when a small band of uniformed men broke through almost directly in front of him. Don and the party stopped, everyone momentarily startled. Then he dashed off at a tangent, knowing it

futile but determined to die while free.

There was shout, then an explosion from a blaster, almost a hit. The concussion knocked Don to the ground. He came to his feet groggily and started to run again when there was a familiar call, "Don! Wait!"

He looked and saw that one of the party was Shiela and also recognized several roboe technicians. He doubled back for the prison but was instantly felled by a blow from behind that knocked one of his legs from beneath him. He realized that it could only have been from one of the older rifles still used for hunting game in order that it wouldn't be torn apart as with a blaster.

The party quickly surrounded him and sped for the security of the trees. There was a flurry of shots from behind that the roboes answered, then the foliage concealed them.

"It's no use," Don gasped from between gritted teeth. "This place is surrounded by soldiers; in fact, I rather imagine that the general anticipated and hoped for something like this."

"We'll get out," smiled Shiela tenderly. Don saw why when they broke into a small clearing and were confronted by one of the two missing space ships, towering high among the forest giants.

"We came in last night during the storm," Shiela explained. "Once in the air we'll fly close to the Earth's surface and nothing can touch us or follow us back to our base."

THE PARTY hustled aboard and they were soon shooting through the atmosphere. "Wait!" protested Don as they then turned attention to his shattered leg. "The sun! Has the sun risen yet?"

"It's just a few minutes more," soothed Shiela, pressing his hot forehead with a cool palm. "Just lie back while we straighten your leg."

"But I've got to tell you," he insisted. "You haven't long to live if I'm right. Perhaps you can do something, although I doubt it."

The roboes all stiffened. Shiela was the first to recover and asked anxiously. "Tell us what, Don?"

He explained about the new weapon. "And," he concluded, "from what's been hinted and knowing the general as I do, I believe sunrise was to signal the transmission of the wave."

To Don's surprise, the roboe men smiled at each other. "You were right," one said to Shiela; "he was for us. I'm glad."

Shiela was almost in tears. "But we'll never make it," she cried. "If we could've reached him five minutes sooner, then everything would've been all right."

"I don't understand," puzzled Don.

"We knew all along what the general was planning," Shiela told him.

"Then you have a defense against the wave?" he asked hopefully.

"No, but we had constructed a specially shielded room for Fa—Father and you," sobbed the girl. Even now Don found it hard to believe that she was a roboe.

"But why for me?" he queried. "The wave was designed for all of you."

"Not for us," broke in Shiela, "For the robots that rebelled against the last civilization."

"I know," said Don. "But many of you have a more thorough scientific training than I. You know that it'll only be a matter of hours before they discover the wavelength that will kill all of you if the first one doesn't?"

BLAKE, ONE of the newer roboes, joined the conversation. "That would be true," he admitted, "except that when the general gives the signal, he dooms himself and the human race to instant destruction. The ancient weapon was designed for the human race and never used."

"You mean that humans were the robots referred to in the records?" asked the incredulous Don.

"Correct," replied Blake. "It appears that..."

"The sun's rising!" shrieked Shiela. "We're too late!" She threw herself over Don as if to protect him.

A low hum filled the cabin of the speeding space ship. "We're tuned to the wave," tersely explained Blake. The roboes stared at Don and he at them. Evidently their explanation had been right, Don thought; none of them were showing any sign of distress.

They still kept eyeing him strangely; even Shiela had drawn back in amazement. Suddenly the thought struck him—the wave hadn't effected him either!

"Incredible!" exclaimed Blake. "The ship's hull couldn't possibly act as a shield."

A dawning hope lit Shiela's face. "No," she said softly. "Not incredible if you stop to think." She came closer to Don. "Where were you born?" she asked.

"I don't know," the confused Don replied. "My first memories are of the orphanage and they never told me. All of the records were burned."

"And who so conveniently happened along to take you away with him?" continued Shiela.

"Why, your fath—Doctor Stone, I mean..." he stopped in embarrassment. The answer hammered at him suddenly and Don straightened up, the throbbing pain in his leg forgotten.

"The wave should've killed me," he practically shouted. His voice sank down. "Then—then that means I must be one of you."

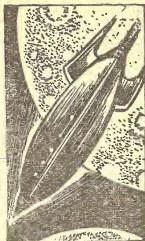
There was a joyous round of congratulations. Finally Blake raised a hand for silence. "I believe we'd better leave now," he told the others. "After all, our creator"—he chidingly stressed the latter word—"our creator must rest."

The ship sped on, leaving to the future, plans for rebuilding a new Earth and civilization.

★ SCIENCE ★

in Science Fiction *A Series of Special Articles*

By JAMES BLISH



Lots of stories are short on astronomy.

3. THE ASTRONOMICAL STORY

A GOOD MANY science fiction fans, including my wife, still feel that a story really isn't a science fiction story, somehow, unless all or most of it takes place off the Earth. There are enough of these extremists to support a pulp magazine devoted almost solely to stories of this kind.

Even outside this group, however, the theme of space-travel is still a basic one in science fiction, so it is not surprising that astronomy is the most often mentioned of all sciences in this form of writing. It is difficult to dig up even a single piece of astronomical knowledge which has not been used somewhere by some science fiction writer—and that includes some mightily abstruse bits of information.

What is surprising, however, is the tiny number of science fiction stories which have actually been based upon astronomy.

As one might expect, some of the most sophisticated uses of astronomy in science fiction have been made by a professional astronomer, Dr. R. S. Richardson of Mts. Wilson and Palomar, who writes stories under the pen-

name, "Philip Latham." Dr. Richardson's stories are specifically astronomical in origin; that is, they *don't* involve spaceflight at all, and they are based entirely upon some specific body of information within the field of astronomy. Furthermore—though this is marginal—all of Dr. Richardson's stories known to me take place on Earth, thus serving to remind us that the Earth, too, is an astronomical object and subject to the forces which govern other celestial bodies. (Dr. Richardson's article, "Aphrodite Project," does involve spaceflight, but it can hardly be called a story, even though it is fiction. Some people have even been unkind enough to call it a hoax.)

One of Dr. Richardson's yarns, "N Day," concerns itself with Earth's last few days of life, after the discovery is made that the sun is about to become a nova. This is a job which has been done often before (one of the best variations upon it, astronomically silly but remarkably convincing as a story, was "Finis"), but never, in my opinion, quite so convincingly. Dr. Richardson, of course, is in a position to sound authoritative about stellar

spectra and the behaviour of exploding suns, and as a writer he has a very soft hand under a catastrophe.

Another Richardson story, "The XI Effect," tells what happened when the entire universe began to collapse in upon itself, rushing back toward the primordial atom; the astronomical theory involved was the Haldane-Milne-Alpher-Bethe-Gamow cosmology, a subject which no other science fiction writer seems to have touched up to now. Despite the size of the subject, the story is convincing because Dr. Richardson didn't allow himself to wax cosmic about it, but dealt instead with how this inconceivable collapse might affect normal human living.

Almost everyone knows Isaac Asimov's marvelous story, "Nightfall." Hardly anyone thinks of nightfall as an astronomical phenomenon, but of course it is. "Nightfall," you'll remember, told the story of a civilization located in a star cluster, where things were so arranged that there was always at least one sun in the sky—except for one night in every thousand years. Again, no spaceflight was involved in the story, but it was an astronomical story in a way that few stories of space travel could be.

WHEN ONE attempts to survey the field from this point of view, it becomes evident that real astronomical stories are very rare. Although astronomy comes on stage, so to speak, in the majority of science fiction stories, it appears only in the background; it seldom contributes anything major to the story. And it is in the pure spaceflight stories—"space opera"—where astronomy is likely to be put out in the cold altogether. The writers of space opera are customarily guilty of all kinds of violations of simple and long-known astronomical facts.

This situation, happily, is gradually changing for the better. While some

of the old-timers still cling to the attitude that a good science fiction story is just a good adventure story in futuristic trappings, most major science fiction writers today are taking pains to present their astronomical facts as accurately as the present state of the science will allow.

A good sample of the level of astronomical accuracy toward which modern writers are striving (though they seldom attain to it so satisfactorily) may be seen in Arthur C. Clarke's recent novelette, "Earthlight," which takes place on the Moon; the details of the lunar landscape in the specific part of the Moon where the story is set are so carefully and vividly presented, it's difficult to believe that Clarke hadn't just returned from a trip "up there".

At least one still-active old hand at science fiction, by the way, didn't need to covert himself to this frame of mind, simply because he has always subscribed to it. I refer to Raymond Z. Gallun—a man who knows so much about Mars that he sometimes gives the impression that he owns the planet. Even back in the days when space opera was the only form of science fiction worth mentioning, Ray was paying attention to the known facts; many of his confreres can remember hearing him say soberly, "But you couldn't see Phobos at all from that latitude, J—" These days, writers are listening to that kind of objection; after "Old Faithful" and "Davy Jones' Ambassador", readers forced them to listen.

But we still have a long way to go. It seems almost incredible that, after all these decades of development, science fiction still has yet to explore the rich field of astronomy with real thoroughness. Drs. Richardson and Asimov have indicated two different avenues of approach to it: one, the exploitation of large-scale astronomical forces as they might effect everyday life; and two, the positing of

specific astronomical situations which would require special solutions of the people who might be involved in them.

THERE IS no reason why stories developed from these points of view should have to exclude spaceflight, despite the fact that stories based in spaceflight have up to now been rather indifferent to astronomical facts. For instance:

L. Ron Hubbard's "To The Stars" dealt with spaceflight, but over such long distances and at such great speeds that Einsteinian relativity became involved. Relativity is a subject which can belong to astronomy or to mathematics, depending upon your biases. Hubbard fell flat on his face in attempting to deal with the math involved (thus following in the footsteps of almost every other writer who has tried to use relativity as a basis for science fiction), but the story was good all the same, and the approach was mature.

On the other hand, such a story can also be unabashed space opera, if you're in the mood to write that kind of thing. A story of my own called "The Bore," for instance, took place on a planet located at one of the epicenters of a triple star system, an unpleasant place to be from almost any point of view, and a highly specialized one; but the story was just space opera—the astronomical situation was a good deal more interesting than the plot, though the plot couldn't have existed without the situation.

There are thousands of such situations still to be explored:

What would it be like to live on a planet of Rigel, a glaring white monster of a star, so close to the great nebula of Orion that that glowing cloud would cover most of the night sky? From such a planet, only a few very bright stars would ever be visible; would a people living there ever develop space travel? How would their history differ from ours; their customs; their sciences?

What would it be like to live on a planet imbedded in one of the great dark nebulae of our galaxy, such as the Horsehead or North American nebulae? The sky of such a planet probably would contain no stars at all; even companion planets might be invisible.

What would it be like to live on a planet of a star at the very edge of a galaxy—with thousands of stars covering half of the sky, and no stars at all visible over the other half?

Both the two Miniature galaxies known as the Magellanic Clouds are parts of our own Milky Way galaxy which have been thrown free of the main spiral, not so many thousands of years ago as astronomical time goes. In the near future, both clouds will have receded to real intergalactic distances. Wouldn't knowledge of that fact, on the part of some race located on a planet within one of the clouds, create a desperate need to find an intergalactic drive the main need?

And there's another galaxy where this process of throwing off satellites hasn't gone quite as far as it has in ours. There's another story, about a people which already has interstellar flight, but doesn't know that it's about to be separated from the mainland of interstellar commerce—perhaps forever...

There are thousands of such stories waiting to be told. The heyday of astronomy as a subject for science fiction is still in the future.

IN THE NEXT ISSUE

COMMUNICADO

An absorbing speculation,
a borderline article be-
tween fact and fiction

By Katherine MacLean

FOOL'S ERRAND

by Lester del Rey

There was but one way to check on the authenticity of a supposedly "original manuscript" of the famous "Prophetic Centuries" of Nostradamus. And Roger Sidney had the means to make this check.

IN SPITE of the wind from the Mediterranean, six miles to the south, the university city of Montpellier reeked with the stench of people huddled together in careless filth; and the twilight softness could only partially conceal the dirt and lack of sanitation in the narrow, twisting streets. No one in this leading medical center of the Sixteenth Century had heard of germs, and no one cared.

But Roger Sidney, Professor of Esoteric Physics at a university that would not be built for another six centuries, both knew and cared. He shuddered, and his tall, thin figure wove carefully around some of the worst puddles, while his eyes were turned upwards fearfully toward the overhanging windows; one experience with a shower of slop from them had been enough. He pressed a kerchief



One of the basic tenets of Aristotelian logic—which was a tremendous intellectual achievement for its time—is that a "thing" or "event", etc., cannot both exist and not exist; a proposition cannot both be "true" and "false", etc. Now this certainly sounds like sound sense, and it agrees with a static and absolute cosmology. But given an infinite-valued, dynamic space-time continuum, then many seemingly exclusive events may exist at once, from the viewpoint of an observer...

to his nose, but his weary feet went on resolutely. Somewhere in this city was a man named Nostradamus, and Sidney had not dared seven centuries to give up the search because of even this degree of dirt and stench and inconvenience.

Nostradamus, the prophet, author of the cryptic *Centuries*! More important, though, was the original clear manuscript of prophecy from which the *Centuries* were distorted; sheer accident had led to the discovery of that in 1989, where Nostradamus had hidden it from too-curious eyes, and it had long since proven accurate. If authentic, it was the only known conclusive proof of prophecy beyond the lifespan of the prophet, and that was now important. The para-psychologists denied that authenticity, since their mathematics showed such prophecy to be impossible; they had even devised an elaborate theory of a joke by some far-future time-traveller to account for its accuracy. With equally sound proof of unlimited prophetic possibilities, the para-physicists could not accept such a useless jest, though they had known for years that time-travel was theoretically possible.

Now, if Nostradamus would accept the manuscript as being his, the controversy would be ended; parapsychicists could extend their mathematics with sureness that led on toward breathtaking possibilities. Somewhere, perhaps within a few feet, was the man who could settle the question conclusively, and somehow Sidney must find him—and soon!

But the little sign appeared at last, a faded blue rooster crowing over the legend: *Le Coq Bleu*. Sidney turned down the steps into the tavern and felt momentary relief from the unpleasant world outside; mercifully the straw on the floor had just been changed, and there was the smell of spitted fowls to remind him of his forgotten appetite. He let his eyes wander along the benches and tables, but they were filled, and he hesitated.

In a booth at the side, a slight young man had been eyeing Sidney's soiled finery carefully, and now he motioned with a careless hand. "Ho, stranger, I've room in this booth for another. And my stomach has room for a pot more of wine, if you'd ask it." The French was still strange in Sidney's ears, even after years of preparation, but the somewhat impudent grin was common to all centuries of students.

HE DROPPED onto the hard bench, feeling his legs shake with weariness from the long chase as he did so. The pressing urge for haste before his time ran out was still in him, but he tried to conceal it as he approached the single subject on his mind. By sheer will power he mustered an answering smile and tossed a coin on the table. "And perhaps food to go with it, eh? You're a student at the University?"

"Your questions are as correct as the color of your money, friend, and that is correct indeed." The youth was up with the coin in his fingers, to return in a few moments with two thick platters bearing roasted pullets and with a smiling, bowing landlord carrying a jug of red wine. Sidney grinned ruefully as his fingers made clutching motions at the table where there were no forks, then ripped off a leg and used his fingers as the other was doing. The wine was raw and a bit sour, though there was strength in it, and some relief.

But there was no time to be wasted, and he returned to the pressing questions uppermost in his mind. "As a student, then, perhaps you know one Michel de Notredame? After I located his lodgings, they told me he might be here... and I've come all the way from Paris to find him. If you can point him out or take me to him, I'll pay you well for your trouble."

"From Paris, eh?" Suspicion crept slowly into the eyes of the other. "Four hundred miles—a week to ten

days of wild journey—to see an obscure student? Stranger, your speech is odd, your clothes are strange, but that is fantastic! His relatives are poor and he is poorer. If this is some strange manner of pressing for his debts, you but waste your time; I'll have none of it. If you have other reasons, name them, and I'll think on it."

"Then you do know him!"

"By sight, but you'll not find him here, so save your glances. Well?"

Sidney pulled his eyes back, and his fingers shook with the eagerness that had carried him through the torture of that savage chase from Paris, after he'd learned of his mistake. He fought again for reason and coolness, and for some approach that might quiet the suspicion of the student. The truth was unbelievable, but he could think of nothing else that would ring true, and he was not adept at lies.

"I care nothing for his past—his debts, his sins, or his crimes. All I'm concerned with is his future, which will make your obscure friend the greatest man of this age. But it's a strange story, and you'd think me raving mad."

The other shrugged. "I've studied philosophy and medicine, and there's little left I can't believe. Your story interests me; spin it well, and perhaps I'll take you to him, unless he should come here first, which I think unlikely this evening. As to madness, I'm a bit mad myself... Landlord, more wine!"

The student was far more interested in the wine than the story, and Sidney felt his upsurge of hope fading again. He'd found already how faint were his chances of tracking down any particular person in the maze of this city. And in another hour perhaps, or even at any minute, he might feel the surge and pull of the great machine in his home century, to go spinning back with his mission unfulfilled. Already he was overdue! He narrowed his thoughts down, trying to find some quicker proof that might suffice if he

could not have the other. "Tell me—honestly, in the name of God—how well do you know Michel de Notre-dame?"

"We share lodgings. Well enough."

"Then, if my time grows short and he does not come... perhaps you'll do. Here." He flipped his purse out onto the table, filled with coins that had been matchlessly counterfeited by minters of the twenty-third century, and with others genuine to the time, received in change. "Take it—all—it's yours. Only believe me. Michel de Notre-dame, under the name of *Nos-tradamus*, will be the greatest of all prophets in the years to come. His name will be greater even than that of Her Majesty, Catherine de Medici. Can you believe that a man from the future might find a need to see him—and even find a way of coming back to do so? I did! I left the year of Grace 2211, intending to reach Paris in 1550. By error, it was 1528, and he was not there, but I knew he had been studying here, so here I am. Can you believe that, young man—for the contents of this purse?"

THE OTHER'S hands had come up slowly to cross himself, then dropped, while his eyes turned from fear to distrust, and then to speculation. "For the money—why not? I've heard that warlocks could bring the long dead from the past by magic; perchance a greater one might journey himself. Black magic? And yet your face has none of Satan's knowledge in it. How?"

"I can't tell you, Science—or white magic. Not black." Sidney's fingers shook again in reaction from the belief he had not expected. But he should have known that scepticism is a product of science advanced enough to doubt, but not to accept what lies beyond its knowledge. He shook his head, remembering the long years of preparation and work that had gone into his being here; he could never explain

[Turn To Page 129]



It was no longer a question of theory, but of money. Man could reach the moon, if Saunders could persuade someone to finance him.

Reaching For The Moon

THE LABORATORY was brightly lit, and four men in business suits surrounded the large table. They stared down at the blueprints on the table, some scratching their heads, others rubbing their chins in speculation. The thin man in gray tweeds eyed them cautiously, his breath coming in short, anxious rushes.

The big man at the head of the table adjusted his eyeglasses, his hand lingering on the rim for a second. Then he cleared his throat and said, "It won't work, Dr. Saunders."

The little man in gray tweeds darted impatient eyes at the man who had just spoken. "Why won't it work? Why not?"

"It can't be done," the big man stated simply. "Maybe sometime in the future, but certainly not now."

Saunders stretched a bony hand out from the cuff of his tweeds. "It can be done," he said, slapping that hand on the table. "It's all here. You've just seen it; you've studied it. Damn it, this isn't a fly-by-night affair! I've worked on these plans for more than eight years. I *know* it will work."

A man in blue serge shrugged and

said, "I'm afraid Bragg is right, Dr. Saunders." He tugged at his collar, the fat hanging in loose folds around his neck.

Saunders turned to eye the newcomer. "You agree?" he asked defiantly. "Even after studying my work? You agree that my proposed rocket couldn't possibly reach the Moon?"

"It might," the man in blue serge admitted, "but we can't speculate on a thing of this nature. After all, Dr. Saunders, there'll be money involved and..."

"Money!" Saunders snorted in disgust. "Is that all you're worried about? You're one of the richest men on Earth, Mr. Peterson. How can you let money stand in the way of what may well be man's greatest achievement?"

Bragg spoke again, peering from behind the thick lenses of his eyeglasses. "Peterson is right; this thing would cost millions—more than any of us would be willing to risk. We appreciate your considering us, but..."

Saunders cut in sharply, "Does that go for all of you? Is Mr. Bragg speaking for all of you?"

By S. A. LOMBINO

A heavy silence crowded into the room. Saunders confronted Peterson again.

"He speaks for me," Peterson said.

"And you, Mr. Thorpe?" Saunders asked.

"Yes, yes, I'm inclined to agree," a balding man in glenn plaid announced.

"Mr. Slade?" Saunders turned to a weasel-like man dressed in solemn black.

Slade nodded, his face chalky white against the black of his garb.

"I've asked you four men because you were probably the richest men on Earth. I've asked you because I thought perhaps you would see the significance of such a project. To reach the Moon." Saunderson's eyes gleamed with an intense light. "To reach the Moon."

"And when we reach it?" Peterson asked. "Then what?"

"Unlimited space," Saunders answered with feeling. "New worlds, worlds beyond the imagination of man. The Moon is only the first step, the experimental step. From there, Mars...or Venus...or a new solar system."

BRAGG SAID, "Rubbish. Even if this should work—I'm not at all convinced it will, but even if it should—what's on the Moon for us? Bare crags and lonely craters. Cold, bleak atmosphere. Nothing."

"Nothing that would bring in money, true," Saunders said. "But look at Copernicus and Galileo. Look at Pasteur and Edison and Curie. Look at...oh, I could go on all night. What these men contributed to mankind can never be measured in terms of gold or silver. Can't you see that?"

"Who wants to go to the Moon, anyway?" Thorpe asked, passing a hand over his bald head. "We've got troubles of our own right here on Earth. Plenty to settle right here, man. Plenty. In a little while perhaps. Sometime in the future. Twenty,

twenty-five years. But now, unthinkable."

"We've been saying that too long," Saunders snapped. "Now is the time! Not twenty or twenty-five years from now, but *right* now! Science has given us the means; it's up to us to take the opportunity and use it."

"It couldn't be done profitably," Peterson said drily.

"Profitably," Saunders said bitterly. "Are your wars profitable?" he suddenly shouted, bringing his bony fist crashing to the table top.

"Let's not get violent," Slade said. It was the first thing he'd said all night. Saunders somehow had the feeling that a corpse had spoken.

"Exactly," he said, "Let's not get violent; let's spend some of the money that's been buying munitions and lives. Instead of razing cities to the ground, let's go up into the skies. Let's spend that money for a project that's worthwhile. For once, forget the profit and think of the meaning to mankind." He paused and his voice grew lower. "We've been ravaged by too many wars, gentleman. Can't we stop this useless butchery and devote our time and energy to something constructive? Can't we? I know my rocket will work. It's scientifically sound. I know, too, that I can get a crew of scientists and technicians to take it to the Moon and back. All I need is the money and a little time. Just a little time."

"There's a war going on, Saunders," Bragg reminded him. He had lit a cigar with a gold lighter and was sitting now, puffing leisurely, blowing smoke at the ceiling.

"I know," Saunders said. "Two wars in the past thirty years and now another one. But consider this a moment. A trip to the Moon would probably end all hostilities on Earth. It would probably unify this planet as no other force has ever done. It will galvanize humanity into constructive action. It will open new vistas that cannot possibly admit plans for war."

PETERSON yawned openly. "Mmmm. I must say you're an idealist, Saunders. I doubt very much if anything short of a trip to the Sun would unify the people of Earth." He chuckled a little at this and looked to the others for approval.

"That's right," Bragg agreed. "There'll always be wars, Saunders; the Earth is overpopulated, always will be."

"More reason to find new worlds," Saunders said tiredly.

"The only solution is war," Bragg insisted. "Survival of the fittest. Forget your crazy ideas about new worlds. There's plenty of room right here... for the people who win."

"And suppose we lose this time?" Saunders asked.

"We'll never lose," Bragg said with certainty.

Slade smiled a thin, wry smile. "Exactly, Bragg," he said. "As for me, whenever people are ready to fight, I'll be ready to supply them with the goods they'll need. In the meantime, the Moon can wait."

"A year, maybe two," Saunders pleaded, "and the Universe will be open to us. Think of it, think of it..." Again his eyes lit with intense ardor.

"You think of it," Bragg said; "I'm going home."

The other men nodded and began bustling into their overcoats. Saunders stood by helplessly, feeling his last ounce of strength seep from his body.

"Nice of you to think of us,"

Thorpe said cheerily. "Business is business, though."

"Yes," Saunders said quietly.

"If you can figure a way to put a warhead on that rocket of yours," Slade suggested.

"Not a bad idea," Bragg admitted.

"Well, Saunders," Peterson said, "we've got to be running. No hard feelings, of course; in fact, I wish you lots of luck." He chuckled again and opened the door. "Good night."

The rest of the men filed out after him, nodding their farewells. Saunders watched them through the window of his laboratory, watched chauffeurs open the doors to long limousines, watched tail lights disappear into the blackness of the night, little red pin-points emphasizing his failure.

He walked back to the table and sat, cradling his head in his arms, leaning on the blueprints of his ship.

All I needed was money, he thought. money and a little time. A year or two at the most. A year or two.

Slowly he rose and brushed a thin hand over his wet eyes. There was work to be done, and tomorrow was another day. He walked to the door leading to his inner laboratory and paused. It was past midnight, and being a punctilious person, Saunders ripped the day's page from the calendar, exposing the new day to view. The new day was September 21st, the year 3951.

He snapped off the lights and stepped quickly into the other room.

THE RECKONING—A Report To Our Readers

Opinion was sharply divided on what stories were liked best after the Clarke novelet, as the point-scores testify.

1. Second Dawn—Clarke	2.35
2. Danger Moon—MacCreigh	3.42
3. The Sun Came Up Last Night—James	3.45
4. No More Pencils, No More Books—Kennedy	3.61
5. Seeds of Insecurity—Shaw	3.84
6. The Altruist—Klass	4.07

Brother Klass may console himself with the curious fact that his was the only story to escape mention in the "dislike" file.



This department is for you, the readers, where you can discuss science, and science fictional subjects in general, and Science Fiction Quarterly in particular. We will pay two dollars for every letter published, regardless of length.

Dear Bob:

While killing time between stories, I thought I'd drop you a note on the current—and now fully digested—SFQ, instead of sending along a too-coldly-analytical tally-sheet.

I'd rate the stories about like this:

The Sun Came Up Last Night: A very good job, particularly at the beginning. It fell off a little at the end, but only from its own fine standards. Who's Edwin James?

No More Pencils, No More Books: A grim little tale, and a neat one for second place. Oddly remindful of Bradbury. And the same question here:—who's Kennedy? Let's see more of both Kennedy and James.

Second Dawn climbs into third place, and the chief difficulty with an otherwise good story, as I saw it, was the obvious difficulty a reader would have in identifying with Clarke's characters.

Fourth, I'd put *The Altruist*. Morton Klass had a neat idea there, but the writing wasn't up to it. Incidentally, I'd rate this story, and the next one, fair-to-average, with the first three definitely superior, and only one I didn't care for in the whole issue. Good!

Seeds of Insecurity is number five, for me. A little involved, a little confusing, but more than passable. I'd like to see Larry Shaw forget about his carefully-structured,

and sometimes too cute, surface and concentrate on the story-plot in itself, instead.

Number six is *Danger Moon*. In my opinion, it's the only brickbat-drawing opus in the issue, mostly because it's a lot of action, but not enough character, plot, freshness, etc.

And there you have it. All in all, I liked this issue better than number one—and I liked number one fine. Incidentally, as a reader, I wouldn't mind seeing the letter column expanded a little—still including both general topics, and ones specifically related to SFQ—but as a writer, I dunno. Means less fiction...


Milton Lesser

(Edwin James is a pseudonym, but not another pen-name for Kuttner, or any of the big boys. He started out writing under this name, and has been appearing in various science fiction magazines for several years. Joquel Kennedy comes from the ranks of fans.)

Dear Mr. Lowndes:

Mr. Martello's analysis of your May cover might very easily fill your letter forum with interesting, but probably inconclusive, discussions of Mankind's sexual history. Of course he liked the cover. He's a man, with

[Turn Page]



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SCIENCE FICTION QUARTERLY

a background of several thousand years of masculine supremacy behind him. Even the meekest of males surely sometimes dreams of himself as a fearless warrior, plucking desirable feminine prizes from the ruins of conquered cities.

Not too many months ago, another fantasy magazine published a letter from a gentleman who half-flippantly, half-seriously advocated teaching wives strict obedience, even if this entailed a revival of the whip as a means of correction. Here is an obviously atavistic wish for a return to things as they once were, the "good old days" when normal relationships between master and slave.

This sort of thing all began a long time ago when marriage and capture were practically synonymous, and a reluctant female had to be "tamed" by physical chastisement. Down through the centuries, this primitive brutality of the husband-master toward the bride-slave has been echoed in the marriage customs of many lands. The Christian churches, themselves, for almost two thousand years, have extracted from the bride a promise of "love, honor, and obey," though in this decadent feminine age some denominations have recently dropped this from the ceremony. Even the carrying of the girl over the threshold is a playful suggestion of the forceful methods of the past.

The actual use of punishment as a part of the wedding festivities is not unknown. It was customary, at one time in ancient Britain, for the best man to give the groom an old shoe, the groom using it to give his blushing bride a sharp rap on the head. In a more extreme survival of the "taming procedure", it was once a custom, in certain districts of the Caucasus, for the bride's father to present his new son-in-law with a short, three-tongued, braided leather whip as a symbol of the transfer of authority over his daughter. Once within the privacy of the bridal chamber, the husband's first official act was violently to strip his wife of her wedding finery, tie her up by her wrists to the bedpost, or to a ring in the wall, and then "teach" her proper respect and obedience with the whip. The "lesson" consisted of twenty lashes across the unfortunate girl's bare back, forty more on her rump, and a final twenty over the backs of her thighs. Needless to say, a young woman so treated

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SCIENCE FICTION QUARTERLY

could readily understand that meek and unquestioning submission to her lord and master was preferable to such whippings in the future.

There are other examples, of course. During the Crusades, a Turkish Sultan distributed beautiful captive girls to his favorite officers on feast days. The slaves were delivered to their new masters nude, chained at wrist and ankle, and with a jewel-handled whip coiled about their throats. A literal translation of what the men so honored were told might not go too well here, but the gist of it was: "for best results, whip well before using."

Such is the stuff from which was woven the concept of "man is the master" and "woman the slave". It's incredibly old, and more or less deeply ingrained in each and every one of us.

Mrs. Hazel Bormartin
Highland Avenue
Dayton, Ohio

(A good many of the "eternal verities" turn out, on examination, to be custom-made.)

Dear RWL:

Thanks for answering brother Martello in such a way that the rest of us could get some words in. Like yourself, I don't see much of anything wrong with his analysis of what the May cover actually said. But is it correct—that is, is this outlook defensible on scientific grounds? That's the payoff question, and you have to start out by asking some other questions: "what branches of science?" and "just what do you mean by 'superior'—what qualities make for it?"

Trouble is that human beings show a remarkable tendency to pass of their own, man-made laws and behavior patterns as laws of nature. Understandable enough: walk up to a gent and say, "Look, you—you're inferior to me and you'd better tip your hat every time you see me coming, or you'll regret it," or walk up to a gal who hasn't been "trained proper" and say, "Okay, woman, you take orders from me, and no argufying," and the response is likely to range from doubt to outright defiance, all depending upon how much bigger you are than him or her.

[Turn Page]

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SCIENCE FICTION QUARTERLY

But if they're trained to believe, from the time they're shirt-tail tads, that skin-tone, language, etc., or gender makes them automatically inferior to you, and that "God ordained it so", or "well, it's been scientifically proven"; and if the set-up is such so that not only can you kick it in to them without getting into trouble with the law, but just about the whole social order—or facsimile of same—revolves upon these assumptions, then most of the so-called "inferiors" are going to consider themselves "inferior", and pretty much behave as if they really were. On that basis, "superiority" of this, that, or the other is scientific—that is, it's been rigged in systematic, scientific manner (regardless of the terminology in any particular case), and the results are predictable. You'll have rebels, but the majority will succumb.

That doesn't make it a "law of nature"; the "inferiors" aren't thereafter "born" that way (except in the propaganda you hand out, of course), and each one has to be housebroken. You can easily prove it isn't a "law of nature" simply by taking a newborn infant of any member of the so-called "inferior" species, or sex, and train 'em otherwise from infancy.

But before you can argue "superiority", you have to agree just what constitutes the stuff. By a laughable coincidence, it seems to consist of what you've got yourself. ("Three inches is an excellent height", retorted the caterpillar, rearing itself up. It was exactly three inches high.) That quote from "Alice in Wonderland" may not be letter-accurate, but the sense is right.

What the advocates of the various "superiorities" do not realize is that their claims not only do not constitute accurate information about the outside world (except in a limited, artificial sense) but that they are displaying their own vital weaknesses and neurosis. "He's inferior" in this kind of framework really means, "I'm afraid to let him compete with me on equal terms; I wouldn't stand a chance."

All of which makes sense in an irrational sort of way.

Wallace McKinley
New Canaan, Conn.

(This reminds me of the story of the tenderfoot who was playing poker with various salty characters, out in the West.

[Turn To Page 126]



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SCIENCE FICTION QUARTERLY

The game went along, until the tenderfoot—who wisely passed dealing himself—found himself holding a royal flush. He bet, raised, then spread out his cards, when called, and started to rake in the chips. The character who'd called him caught his wrist firmly, but mildly, and said, "Not so fast, son," then laid down his cards. Deuce, four, six, eight, ten. "Lallapoloozer," he exclaimed. "Beats anything." Everyone in the bar agreed to this, and some hands no doubt strayed suggestively toward sixshooters; so the tenderfoot sadly let the other man rake in the chips.

An hour or so later, our hero bet the limit again, then, when called, laid out his deuce, four, six, eight, ten and started to rake them in. Again a horny hand was laid on his wrist. "Not so fast, son."

"Look, gents," the tenderfoot said in an attempt to talk to them on their own level, "yuh all done agreed that tuh lallapoloozer beats anythin' a-tail."

"Yup," said the other, "it does. But there's only one lallapoloozer recognized a night."

The story doesn't tell whether our protagonist ever found out that the "lallapoloozer" consisted of anything the first party to claim it happened to have in his hand at the time.)

Dear Mr. Lowndes:

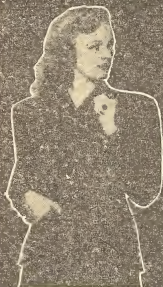
I have just finished reading the August issue of SFQ and enjoyed it very much. I particularly enjoy the articles by Mr. Blish; they prove just how much scientific thinking goes into many of the stories. From such imaginative thinking on present-day theory comes the scientific triumphs of the future.

As to the stories, I preferred the little masterpiece by Kennedy, *No More Pencils, No More Books*. The powerful impact left in the reader's mind by the ending is creative literature of the kind seldom seen in short stories of this type. Also, the story was excellently written and plotted.

In order, I liked: (2) *Danger Moon*, (3) *Seeds of Insecurity*, (4) *The Altruist*, (5) *Second Dawn*, (6) *The Sun Came Up Last Night*. Mr. James came in last this time because of his "perfect hero" character, Sean. To me, the thought of Sean entering the fortress of the greatest minds of the world and leaving with the leader of the colony—all this with no conflict whatsoever—was just too hard to accept. True, he explains that violence was unknown to

[Turn To Page 128]

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SCIENCE FICTION QUARTERLY

them, but the colony was not so ancient that everyone would forget completely about "violence". Really, Mr. James!

I must comment on the quality of the stories which makes it difficult to choose one over another. The ideas and plots were almost completely fresh, without a sign of triteness. *Danger Moon* wasn't anything particularly original, but the story was nevertheless enjoyable. In a sudden fiasco of publishing, *Science Fiction Quarterly* is still on top.

I think there is too much printing on an otherwise fine cover. I like your policy of presenting no reprints. I think that your comments on the letters are good, and could be longer.

The little pictures on the chapter numbers add a great deal to the appearance of the magazine.

Rather than trimming the edges of the magazine, which would add to publishing costs, I'd rather see you cut out the many advertisements. Replace these either with more artwork, or another story. This would probably not increase your overhead any more than trimming the edges, and I, for one, would rather see another swell story along with untrimmed edges.

If this happens to get into your "It Says Here" department, I would enjoy correspondence. Although I've read science fiction for 11 years, I've never before written

[Continued At Top Of 129]

THE WAY I SAW IT

(Continued From Page 93)

that something may be wrong with the pacing—and "Destination Moon" did drag in the first part.

Taking it all in all, "When Worlds Collide" is an intelligent production of an exciting and mature science fiction story. If the book is fresh in your mind, you may be somewhat disappointed at first, but I think you will find that it holds up better in retrospect, and that you will want to go back for a second look. There are not many films which really call for a second seeing before their excellences are fully appreciated, and it's a matter for celebration when a science-fiction movie can be put in this class.

RWL

SCIENCE FICTION QUARTERLY

to any magazines, or to fellow fans. Keep up the excellent work!

William Thompson

1586 Westminster

Salt Lake City 5, Utah

(Eliminating the ads would amount to throwing out a fair amount of revenue, which helps to offset production costs. Replacing them with fiction or artwork, would be something like cutting a man's salary and increasing his taxes at the same time. It's an open question whether throwing out the ads would make *enough* of a difference to *enough* prospective buyers so that circulation would increase over and above the point necessary to make up the momentary loss. Were the magazine being put out as a hobby, with the hope and expectation of its showing a profit eventually, but with the intent and ability to carry it along nonetheless, then the ad-less experiment might be feasible. True, the old SFQ did not have ads, and it did have trimmed edges, etc. But production costs were far smaller in those days, and editorial costs—due to the use of reprints—were lower, too. If ads were eliminated now, then something would have to be cut out, until and unless increased circulation made up the difference. The magazine might *look* better, but I gravely doubt that the quality we have now could be maintained.

As things stand, I believe that this is a rather good magazine, but I'm not satisfied with it yet. Readers can cooperate in two ways: by letting me know, in no uncertain terms, where they feel improvement is needed—in the editorial department, that is—and by introducing the book to new readers. I'm not making now, nor do I expect to make, a *plea* for readers' assistance in increasing circulation. If you feel *Science Fiction Quarterly* is worth passing along, I assume you'll do it where and when you can; if not, I hope you'll tell me why.)

FOOL'S ERRAND

(Continued From Page 116)

that, or the need behind it, when Paraphysics and Parapsychology would be meaningless words.

He could never tell of the immense, inconceivable power needed to bridge time from one of its loops to another, or the struggle he and his colleagues had waged for three decades to be granted the use of such forces. Now, it had surged out, carrying him, in the tiny network of wires woven into these garments, into the past; sometime soon, the return surge must flow

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back to return him. They had figured a week, and already ten days of desperation were gone while he fled south on the fool's errand that must be made. Their calculations had erred as to the length of a time-loop by twenty-two years, and he could not guess how that would affect the length of the power surge, but the return flow must surely have begun.

He caught himself up and went urgently on. "Notredame won fame in the court of Catherine for prophecy while living; when he died, he left verses called *Centuries*, with tantalizing hints which some believed; and when his original manuscript was found, he won an undisputed place in all history. Now, we must know, without the doubts that exist, whether that manuscript was his; we *must*. Even a little evidence will decide, but... Do you know his writing?"

"I've seen it often enough. Stranger, your story begins to interest me, whatever truth may lie in it. But as to prophecy, all will tell you it's no uncommon thing; the greatest astrologers in the world are in France." The student filled his mug again and leaned back, shaking his head to clear it of wine fumes. "If this Notredame was an astrologer and you need astrologers, why not find others?"

Sidney shrugged it aside. "No matter; they would not help. He claimed to be an astrologer, of course, but... But could you swear to his writing if you saw it? Here!" He thrust his hand into his clothes and brought out a parchment manuscript, to spread it quickly on the table. "This is an exact copy, down to the very texture of the parchment and atoms that compose it. Don't mind the contents; they no longer concern us, since we've passed the final date of specific forecasts. Only study the writing. It's a young man's script, and all else we have of his is from his later years. But you know his younger hand. Swear to me in honesty, *is it his?*"

THE YOUTH bent his head over it, tracing with his finger, and running his other hand across reddened eyes. Sidney cursed the wine and the slowness of the man, but at last the other looked up, and something in the sheer desperation on Sidney's face seemed to settle his doubts, for his own turned suddenly serious.

"I don't know, stranger. It looks like it—and yet I never wrote such words, nor ever planned to!"

"You. . . you—Notredame!"

"I am Michel de Notredame; a drunken fool to admit the fact even now, when you might be here on any—"

But Roger Sidney from 2211 was laughing, a wracking that shook him in convulsions, harshly soundless. One trembling finger pointed to the manuscript, then to the student, and the convulsive shaking redoubled. "A cycle—a closed circle! And we—and that—that—" But he could not finish. Notredame swung his eyes about to see if others were noticing, but the tavern was emptied and the landlord was busy at the far end. He turned back, and suddenly crossed himself.

There was a glow about the stranger, a network of shining threads in his garments that might have been frozen lightning. It spread, misted, and was gone, while the bench where he had been was suddenly empty. Notredame was alone, and with slowly whitening face, he began to cross himself again, only to stop and snatch the purse and coins from the table where they lay and tuck them into his clothes. For a second, he hesitated, his now-sober eyes narrowing thoughtfully.

"Nostradamus," he muttered. "Nostradamus, astrologer to the court of the Queen. I like the sound of that."

His fingers picked up the manuscript, and he slipped swiftly out into the night.

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